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24-PAGE GUIDE



EXPERT
ADVICE

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Saturday 12 December 2009

amateur Photographer

Canon EOS 7D vs Nikon D300s

These price-war cameras want to be yours. Find out which one should

New
series
Part 1

AP's
guide
to...
Adobe
Photoshop
Elements 8

Part 1: What's new



EXPERT ADVICE

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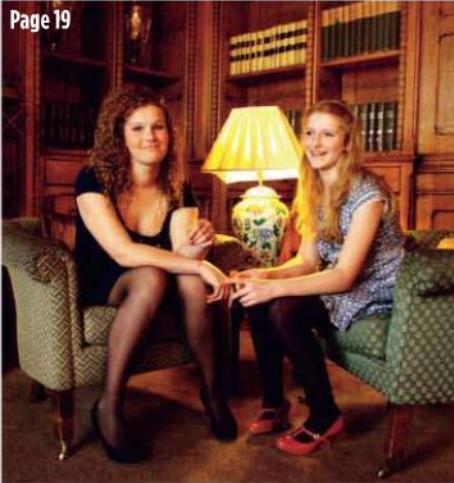


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53 Canon EOS 7D vs Nikon D300S

COVER STORY

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No noise isn't good news



The drive to increase the sensitivity of photographic materials has been a scientific constant since

the invention of a way to make light leave a mark. In our world of six-digit ISO ratings, it's easy to forget that once upon a time a portrait sitter may have had to sit still for up to an hour. Action photography just couldn't exist in 1850: a 100m race might be run 360 times in the same time it would take to capture enough light to make a permanent record of the winner's face. Now we can take pictures in near darkness and find little to complain of in the granular disturbance of the image. Noise, like film grain, is on the way out – what business does the structure of an imaging sensor have in corrupting our landscapes?

I have to confess, though, that the prospect of life without it now seems rather disturbing. I used to enjoy golf-ball film grain and on occasions still go to some lengths to induce it. Digital noise has never been as attractive, but not all moods suit the clinical purity we are heading for; universal smoothness will deprive us of choice. We can add grain after the event, of course, but what an in-organic process that is.

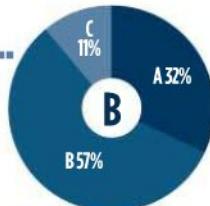
Our question of the week

In AP 28 November we asked...

Will you be making a photographic New Year's resolution for next year?

You answered...

- A Yes 32%
- B No 57%
- C Don't know 11%



This week we ask...

What is the highest ISO setting you regularly use?

- A 100-200
- B 400-800
- C 1600-3200
- D 6400 and above

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News

News | Analysis | Comment | PhotoDiary 12/12/09

Image integrity to be scrutinised | Enhanced pictures under threat

World Press Photo 'manipulation' crackdown

DIIGITAL manipulation of images will be strictly policed by judges at next year's World Press Photo competition.

Photographers will, for the first time, be required to submit the 'raw' image file if the judging panel suspects that a 'news' photo has been digitally manipulated, said Maarten Koets, deputy managing director at World Press Photo.

Koets said the move comes as news 'wire' services tighten up their criteria for publishing such pictures.

In 2006, a Reuters photographer was sacked for digitally 'doctoring' two images that seemingly exaggerated the impact of Israeli air strikes on Lebanon.

Earlier this year, *The New York Times* accused a UK-based photographer of digitally manipulating images, forcing it to remove photos from its website after apparent detective work by a member of the public.

Koets was speaking to AP at the opening of the World Press Photo 2008 exhibition, which runs at the Royal Festival Hall in London until



PAUL GILLINGHAM

13 December.

World Press Photo rules now include a clause that states: 'The content of an image must not be altered. Only retouching that conforms to currently accepted standards in the industry is allowed.'

'The jury is the ultimate arbiter of these standards and may at its discretion request the original, unretouched file as recorded by the camera or an untoned scan of the

negative or slide.'

World Press Photo managing director Michiel Munneke later admitted: 'We realise that by using the phrase "currently accepted standards in the industry" we leave room for interpretation. This is because there is a need for flexibility.'

American photographer Anthony Suau scooped the 2008 title with a black & white image depicting the impact of the US housing

crisis. He won €10,000 and a Canon EOS 5D Mark II digital SLR camera.

The website for the 2010 competition has now opened.

Rules state that entries posted in on CD/DVD or sent in by email will no longer be allowed.

The winner of the 2009 World Press Photo competition will be announced on 12 February 2010.

For details visit www.worldpressphoto.org.

SNAP SHOT

Stop press

As we went to press, a photographer was stopped while taking photos of Christmas lights on a Sussex street, amid terrorism fears. Police say the photographer aroused suspicion because he was seen taking 'many photos' in a busy shopping area. The photographer, Andrew White, said that two PCSOs had followed him as he walked to work.

Police photos

Police have been told to clarify the legality of photographing protesters and holding these images on a database. The 'recommendation' is contained in a report on policing protests, published by Denis O'Connor, Her Majesty's Chief Inspector of Constabulary. O'Connor called for 'clarification of the legal framework for the use of overt photography by police during public order operations, and the collation and retention of photographic images by police forces and other policing bodies'.

AP reader in Afghanistan Xmas mission

BRITISH soldiers in Afghanistan will be able to send pictures back home for Christmas thanks to a photographer who has pledged to donate the Canon camera he won as a prize.

Lee Jeffries won the Canon PowerShot SX1 IS as second prize in round nine of the Amateur Photographer of

the Year (APOY) competition.

Lee, who lives in Bolton, Lancashire, said: 'The reason for doing this is so the guys out there have the facility to perhaps send an image or a video back home to their families in time for Christmas. We can't bring them home, but I guess we can certainly do our bit to help make it

easier all round.'

Worth around £590, the Canon PowerShot SX1 IS is credited as a 'great all-rounder', boasting a 20x zoom and a continuous shooting rate of up to four frames per second.

The Canon camera also features Full High Definition movie recording, face



detection and anti-blur technology.

Lee's winning image was featured in AP 28 November (page 35).

Jessops plans

Jessops boss David Adams has made key staff changes to take the firm into 2010. Adams has hired Chris Yates, who has 20 years' experience at Sainsbury's supermarket, as operations director. Meanwhile, Adams hopes the appointment of new chief executive Trevor Moore will allow the chairman to 'step back' and figure out Jessops' strategy for the next two or three years.

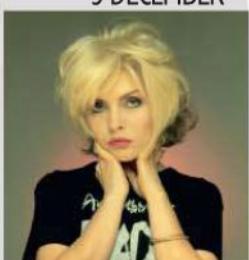
PhotoDiary

A week of photographic opportunity

WEDNESDAY

EXHIBITION Being Blondie: Debbie Harry by Brian Aris, until 11 January 2010 at Proud Camden, London NW1 8AH. Tel: 0207 482 3867. Visit www.proud.co.uk. **EXHIBITION** OpenSee by Jim Goldberg, until 17 January 2010 at The Photographers' Gallery, London WC2H 7HB. Tel: 0845 262 1618. Visit www.photonet.org.uk.

9 DECEMBER



© BRIAN ARIS

THURSDAY

EXHIBITION Design and Nature features waterwheel photos by Dr Adriana de Miranda, until 12 December at the Brunei Gallery, London WC1H 0XG. Tel: 0207 898 4046. Visit www.soas.ac.uk/gallery. **EXHIBITION** World Press Photo 2009, until 13 December at Royal Festival Hall, Southbank Centre, London SE1. Tel: 0207 960 4200. Visit www.worldpressphoto.org.

10 DECEMBER

FRIDAY

EXHIBITION Large-scale prints by Richard Phillips, until 9 January 2010 at The Courtyard, Edgar Street, Hereford HR4 9JR. Tel: 01432 340 555. Visit www.courtyard.org.uk. **EXHIBITION** Growing Up Black by Dennis Morris, until 23 January 2010 at Hackney Museum, Technology and Learning Centre, London E8 1GQ. Tel: 0208 356 3000. Visit www.hackney.gov.uk.

11 DECEMBER

SATURDAY

DON'T MISS Cologne Christmas Market, South Bank London SE1, until 23 December (free entry). Features decorated wooden chalets. Visit www.southbankcentre.co.uk. **EXHIBITION** Political Landscapes, until 5 February 2010 at The Magnum Print Room, London EC1V 3RS. Tel: 0207 490 1771. Visit www.magnumphotos.com.

12 DECEMBER

SUNDAY

EXHIBITION Science in Focus – scientists photographed by Anton Corbin and John O'Grady, until 17 January 2010 at the National Portrait Gallery, London WC2H 0HE. Tel: 0207 306 0055. Visit www.npg.org.uk. **DON'T MISS** Christmas markets at various venues in Manchester, until 22 December. Visit www.manchestereveningnews.co.uk.

13 DECEMBER

MONDAY

DON'T MISS Ice-skating at Somerset House ice rink, London, until 24 January 2010. For tickets call 0844 847 1520. Visit www.somersethouse.org.uk. **EXHIBITION** Points of View: Capturing the 19th Century in Photographs, until 7 March 2010 at the British Library, London NW1 2DB. Tel: 0207 412 7332. Visit www.bl.uk.

14 DECEMBER



TUESDAY

DON'T MISS Winter Wonderland in Hyde Park, London, until 3 January 2010. Includes ice rink and giant wheel. Visit www.hydeparkwinterwonderland.com. **EXHIBITION** Keep the World Wild by Roger Hooper, until 21 January 2010 at Hoopers Gallery, London EC1R 0AA. Tel: 0207 490 3907. Visit www.hoopersgallery.co.uk.

15 DECEMBER

News

Leica outlines future of its camera policy

LEICA has made it clear that it expects technology... the processor could also be used in cameras below this [S2] line. We can use all the firmware and image processing development in this camera for all coming products.'

Leica's flagship 37.5-million-pixel medium-format DSLR is still on course to be launched this month.

Asked whether the S2's technology will fall within the reach of photo enthusiasts in future Leica cameras, Leica S-system product manager Stephan Schulz said: 'There is a lot of potential. On the one side, the autofocus technology we have developed, and on the other the digital image processing



technology... the processor could also be used in cameras below this [S2] line. We can use all the firmware and image processing development in this camera for all coming products.'

Speaking in an interview with AP at Leica's new store in Mayfair, London, Schulz added: 'It has a lot of new technology and this [the S2] will be a platform for future products so we can use nearly everything we have developed for the camera for future cameras in Leica's portfolio.'

Schulz hinted that we can expect an exciting new product from Leica at the photokina show in Germany next year. Originally, Leica expected the S2 to go on sale this summer, but its launch was put back until October.

Leica then delayed its debut until December, saying it needed more time to meet advance orders.

To watch AP's video interview with Stephan Schulz, visit www.amateurphotographer.co.uk.

Stolen cameras on eBay fear

PHOTOGRAPHERS fear that SLR cameras stolen from a dealer in Essex have turned up on the online auction site eBay.

Thieves escaped with more than 40 limited-edition Minolta Dynax 7 film-based SLR cameras from a shop in Ilford run by camera dealer David Leung (see AP News 7 November).

Since AP reported the theft, online forums have been alive with speculation from photographers worried that the cameras are being sold on eBay by a user based in nearby Romford.

Photography enthusiasts have bombarded Leung with emails calling for him to release the serial numbers of the stolen models. But Leung told us he does not have a record of the serial numbers and denied claims he is not keen to retrieve the cameras.

Leung said that London's Metropolitan Police, which are dealing with case, have been slow to react.

Anyone who can help should contact the Metropolitan Police on 0208 345 3436, quoting crime reference number 4422029/09.

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SNAP SHOT

Kenro in Ireland

Photo retailer Kenro has opened a branch in Dublin, Ireland. The shop is based at 26 Upper Pembroke Street, Dublin 2. Kenro supplies its own brand of photo frames, as well as kit including studio lighting and tripods. For details visit www.kenro.co.uk.

Weston's muse

Charis Wilson, the woman said to have inspired photographer Edward Weston and who posed for many of his portraits, has died aged 95. Wilson was Weston's 'model, muse and companion' from 1934-45. The couple, who were married in 1939, were divorced in 1946, reported the Associated Press.

Photo rap

A mother who complained that the publication of photos taken at her son's funeral was an intrusion into her grief has had her complaint upheld by the Press Complaints Commission (PCC). Hazel Cattermole of Weston-Super-Mare, Somerset, complained about photos of mourners and an article published by the *Bristol Evening Post* newspaper on 26 February 2009. Her young son, Mark, had taken his own life, a fact calling for great restraint and sensitivity by the press, said the PCC.

Hotel winner

A photographer has beaten 1,200 entries to win a worldwide photo competition hosted by Servigroup Hotels. The first-placed photo (see below) was taken by Francesca Piras in a contest that judges said attracts an 'ever-increasing quality, number and variety of photos'. Francesca's prize was a four-night stay in a hotel and an Olympus compact camera.



BBC man caught in sunset terror stop

© JEFF OVERS



A BBC stills photographer was thrust into the limelight when he became the latest to fall victim to anti-terror laws. He talks to AP

POICE used anti-terrorism powers to quiz a BBC stills photographer while he was attempting to take a photo of St Paul's Cathedral at sunset.

Photographer Jeff Owers has lodged a formal written complaint against the Metropolitan Police after officers demanded his name, address and date of birth under the Met's Section 44 'stop and account' powers.

An officer told Jeff that he could have been taking the photos as part of a reconnaissance operation ahead of a terrorist attack.

The drama took place at around 4pm outside Tate Modern on London's Southbank on 25 November.

Jeff – who said a nearby amateur was also 'harassed' – branded the incident an infringement of his liberty.

Jeff said the officer told him she was 'stopping people who were taking photographs as a counter-terrorism measure'.

Speaking to AP, Jeff said: 'I pointed out that it was a very busy tourist destination and that every other person had a small camera or iPhone, and that we had been targeted because our equipment was more obvious.'

'Pointless stupidity'

Jeff added: 'I was using a Nikon D700 and a small travelling tripod, which was still in my bag when I was stopped. I was standing next to a young guy who had his tripod already set up. And because he had quite a lot of equipment to hand, he caught the policewoman's attention.'

Lodging a complaint against the Met, Jeff wrote that, in his 30-year career, he has only ever been stopped twice before, once in Russia and the other time in Zimbabwe.

He added: 'The suspicious nature of the officer and utter, pointless stupidity of the whole affair has led me to question the nature of our democracy. Not to mention the waste of resources... The real irony is that London is covered by tens of thousands of CCTV cameras... Access to the internet can produce the most detailed maps and images of the capital if one is actually engaged in reconnaissance (to quote the WPC) for a crime.'

Former officer blasts Met
Commenting on the story, 'Pete C', who describes himself as a former Met officer and

a keen photographer, wrote on the London *Evening Standard* website: 'All I can say is I'm embarrassed. If I were a terrorist doing a recce, I think Google Earth would be my first port of call, and if I were to take photographs at ground level I might do it surreptitiously – not with an SLR around my neck or on a tripod.'

He said that by 'alienating' law-abiding citizens and tourists going about their everyday business, this has in some ways handed a 'victory' to terrorists.

In his letter to the police, Jeff continued: 'Keen amateurs and professionals need to achieve better quality [photos] and so are inevitably going to stand around for a bit longer with more obvious equipment. That doesn't mean we are criminals or planning attacks – it actually implies the exact opposite.'

Jeff appeared on the *Andrew Marr Show* on 29 November, telling viewers that the issue continues to affect professionals and amateurs alike (visit http://news.bbc.co.uk/1/hi/uk_politics/8384972.stm).

Earlier this month, AP's news editor Chris Cheesman spoke to a police community support officer about the rights of photographers as part of research for a video about photography on London's South Bank.

The PCSO claimed that officers do not use Section 44 stops as much as they did previously (see www.amateurphotographer.co.uk).

Police response

A spokesman for the Met said that the photographer's complaint will be dealt with 'as appropriate'.

In May, following a review by the Met, officers were told to scale back their use of Section 44 stop and search, amid widespread criticism over use of the anti-terror law. In a statement, the Met said that Section 44 is now 'only deployed at pre-identified significant locations, such as iconic sites and crowded places, and when specific operations have been agreed for specific areas'.

A Met spokesman told us separately: 'I'm fairly sure that it's not going to be phased out completely.' He added that the move is designed to enable such stops to be conducted 'more effectively and more accurately'.

Commenting on its policy regarding 'photography in public', the Met added: 'We encourage officers and the public to be vigilant against terrorism, but recognise the balance between effective policing to protect Londoners and the rights

of the media and the general public to take photographs. Guidance around this issue has been made clear to officers and PCSOs through briefings and internal communications.'

The Government claims there has been a large fall in the use of anti-terror stop and search powers. The Home Office claims that there was a 37% drop in Section 44 'stop and searches' in April-June 2009, compared with the same period the year before. However, this figure does not show the number of stops carried out without a subsequent search, or the 'stop and account' figures. And the Government does not hold a record on the number of 'photographers' stopped under anti-terror legislation. A previous Freedom of Information request for this, made by AP earlier this year, was refused by the Met on the grounds that it would be too expensive to compile.

To view the Met's guidelines, visit www.met.police.uk/about/photography.htm.

New CEO at Hasselblad

CHRISTIAN Poulsen, who led Hasselblad through its transformation from film to digital, has left his position as Hasselblad CEO to 'pursue other activities', the company said.

Poulsen, who became CEO in 2004, is replaced by Dr Larry Hansen, the current chairman, who will take on both roles. However, Poulsen will remain as Hasselblad's strategic technology adviser.

Hansen, who joined Hasselblad in March from

Carl Zeiss, pledged to lead the firm in a 'quest to take photography further'.

Hansen said: 'Hasselblad and the entire industry face constant change, which, of course, opens a range of opportunities. I will ensure that Hasselblad continues to extend our best efforts to encourage and serve our valued photographic solutions.'

He added: 'Owning a Hasselblad is the dream of all serious photographers around the world and we



Dr Larry Hansen (pictured) replaces Christian Poulsen

will continue to make every effort to make that dream as accessible to enthusiasts as well as professionals.'

A spokesman told AP that the move was not part of a money-saving exercise.

SNAP SHOT

Nikon vs Canon: the movie

Nikon and Canon DSLR camera rivalry threatens a couple's relationship in a rap video that has attracted thousands of hits on the internet. Posted by Photo Club, the song begins: 'This is a story from not long ago about a boy and a girl who fell in love... but there was a problem I didn't count on – the fact I was a Canon and she was a Nikon.' Apparently, the problem is that the girl uses a Nikon D200 while the boy has a Canon EOS-1Ds Mark III. The rest of the lyrics are a little more colourful in the YouTube video (visit www.amateurphotographer.co.uk/news).

Panasonic GF1 firmware

Panasonic has updated the firmware for its DMC-GF1 Micro Four Thirds camera and lenses, to boost performance especially when shooting movies. Panasonic claims that firmware version 1.1 for the DMC-GF1 includes improved AF performance in movie mode. It is also designed to improve auto white balance performance and image quality when taking 'high-sensitivity photos'. Visit <http://Panasonic.jp/support/global/cs/dsc/>.



Giant camera

Panasonic installed a giant camera 'sculpture' at London's Waterloo Station in the latest of a series of publicity stunts to promote the firm's DMC-ZX1 digital compact. The 3.6x2m fibre-glass model spent three days at Waterloo before being moved on to Victoria and Liverpool Street stations.

Photographer's pic breached 'privacy'

A PHOTOGRAPH of a woman outside her house was deemed to be an invasion of privacy, even though the photographer was not on the property at the time, the press watchdog has ruled.

Nicola Shields complained that the *Daily Record* newspaper had also broken the Press Complaints Commission (PCC)'s code on harassment by pursuing her over a story that she was pregnant with a footballer's child.

The article was published on 18 August 2009.

The newspaper had made

it clear that its photographer was not on Ms Shield's own property when he took the image and said that she was clearly visible to anyone passing at the time.

The *Daily Record* also cropped the image so as not to identify Ms Shields' home.

On the privacy claim, the PCC ruled: 'The Commission agreed with the complainant that she was in a place where she had a reasonable expectation of privacy when she was photographed.'

'Her home was very secluded, on a private road, and there would have been very few passers-by to see her at the time the photograph was taken.'

ClubNews

AP's weekly round-up of club news from all over Britain

Cardiff University Photography Club

A member of Cardiff University Photography Club has won honours in the Cardiff Through a Lens competition. Angad Singh bagged third place, according to a report in the *South Wales Echo*. The top prize went to Evan Mears.

Lytham St Annes Photographic Society

The society is holding an exhibition of nature and wildlife pictures until 6 December at Fylde Art Gallery, Booths Supermarket, Haven Road, Lytham, Lancashire FY8 5EG. It is open during store hours and entry is free.

Windlesham & Camberley Camera Club

The club is planning 'An evening with...' event hosted by renowned landscape photographer Charlie Waite to help mark its 75th anniversary next year. The event will take place on 6 March 2010 at High Cross Church, Knoll Road, Camberley, Surrey. Tickets cost £10. To book call 01252 549 004. Visit www.wandccameroclub.org.uk.

Send club news to: apevents@ipcmmedia.com

Amateur Photographer

This week in...

1917

Long before cameras boasted digital miniaturisation-effect modes, AP ran a feature about 'table-top photography' in its issue dated 17 December 1917. AP pointed out that these 'fascinating little scenes' were back in fashion. Setting up dolls and models to create still-life scenes could prove lucrative as illustrations for Christmas cards or children's publications, for example. But ensuring the figures and scenes were in correct proportion could prove tricky. Readers were advised to arrange the scenes so that the figures were placed about four inches in front of the background 'to put the latter slightly out of focus'. AP added that this will soften any harsh lines and 'throw up the figures in "sharper relief"'.



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Review

Your guide to the latest photography books, exhibitions and websites



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Exhibition

Political Landscapes

Until 6 February 2010

Magnum Print Room, 63 Gee Street, London EC1V 3RS. Open Wed-Fri 10.30am-4.30pm, Sat 10am-1pm.
Tel: 0207 490 1771. Website: www.magnumphotos.com. Admission free

When you think of leading photojournalism agency Magnum, you don't automatically associate it with landscape photography. Yet war-ravaged landscapes and drought-inflicted scenes are often an integral part of its members' work. In this new exhibition, Magnum has selected several images from its archives and members' contemporary projects that reflect man's impact on the world.



© BRIAN BARRY/MAGNUM PHOTOS

These 'issue-based' landscapes include both black & white and colour images of lands broken by conflict, scarred by industry or destroyed by natural disasters. There are several well-known photographers whose work is featured in the exhibition: Larry Towell's image of the aftermath of hurricane Katrina and panoramic images from Josef Koudelka's work 'Black Triangle', which examines the ecological impact of French coal mining in the Ore Mountain foothills, are just two notable examples. Also included are images by Werner Bischof, Carl de Keyzer and Stuart Franklin. **Gemma Padley**

Book review**Nature Photography**

Insider Secrets from the World's Top Digital Photography Professionals

By Chris Weston

Focal Press, paperback, 272 pages, £17.99, ISBN 978-0-240-81016-4



Chris Weston has been a busy man this year, releasing a slew of books (see AP 28 November). His latest is an interesting take on the technique guide format. Eschewing traditional chapters, Weston has opted for 'habits', writing in-depth on the seven that aspiring nature photographers would do well to pick up: plan the picture, know your camera, see what it sees, control your camera, learn

the rules (and when not to apply them), capture the moment and practice. Trouble is, it only skims the surface, with the exception of rules and when not to use them. Omission is as important as addition, so it's refreshing to see it addressed. For that, and some nice illustrations, this gets an extra star.

Jeff Meyer

Website**www.marcinbera.com/blog/portfolio**

There is nothing more satisfying than a website that is bursting with beautiful landscapes and Marcin Bera's images are pretty spectacular. The 31-year-old, who is a sociologist by profession, was born in Poland, but has lived in Bournemouth, Dorset, since 2005. In the eight years he has been taking pictures, Marcin has built up an impressive portfolio. From images of rugged shorelines in Snowdonia, Wales, to unspoilt Cornish beaches, his website ticks the boxes for both variety and quality. The homepage opens into his blog, where viewers can click on thumbnails of his most recent work. Further down the page Marcin has

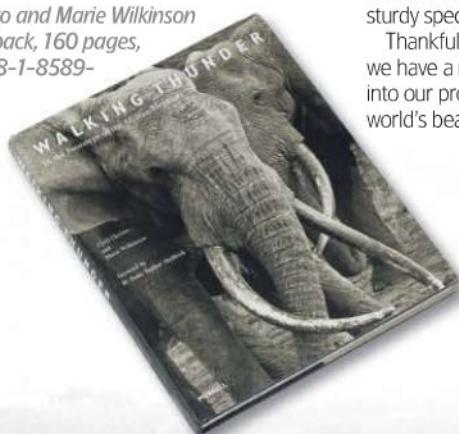
selected individual images, including a short description of how and where each was taken, as well as technical details. It's an inspiring collection to browse during these dark winter days.

Gemma Padley

**Book review****Walking Thunder**

In the Footsteps of the African Elephant

By Cyril Christo and Marie Wilkinson
Merrell, hardback, 160 pages,
£35, ISBN 978-1-8589-4505-7



It's a sad truth that many of the animals on the covers of our favourite wildlife books will be extinct in 20 years. By the time the babies of 2009 are adults, the wildlife books reviewed in this magazine will probably feature horses, dogs or maybe cockroaches – some sturdy species we humans haven't managed to kill off.

Thankfully, amid the environmental pestilence we have a number of brilliant photographers tuned into our problems who are willing to document the world's beauty before it passes away. There are

only 10,000 African elephants left in the wild, and Christo and Wilkinson capture the gentle, imposing nature of these animals against the stunning backdrops of their plains environment. Big, bold, black & white double-page spreads are as arresting as the creatures themselves and draw you into their world. This is more than a wildlife book; it's documentary photography at its finest.

Jeff Meyer





Share your views and opinions with fellow AP readers every week

Letter of the Week

Moving too fast

Things are happening too quickly for me these days. ASA became ISO, SLRs became DSLRs, photography became imaging, and now Panasonic has come up with the Lumix DMC-G1 and everybody calls it a DSLR. But this is wrong:

it doesn't have a reflex viewing system. I call it a DEVIL: a Digital Electronic Viewfinder Interchangeable-Lens camera.

Just when I got comfortable with that, Ricoh comes up with the GXR. Now what on earth are we going to call this one? Maybe a SPUD: a Sensor and Power Unit and Display camera, with an Add-on Lens Pack (SPUDALP?). Please someone, come up with a more complimentary acronym!

Anthony Perrin, Essex

Online discrimination

In AP 17 October, there was a competition to win a Panasonic Lumix DMC-GF1 plus lens. To enter you had to visit www.amateurphotographer.co.uk/competitions. So, you cannot enter unless you are on the web. I have been a reader for more than 50 years and, not having either a laptop or a computer, the competition seems unfair to me and discriminatory if you don't have modern technology.

Is there a reason? After all, the recent competition for the Leica M9 was based on coupon entry.

Geoffrey Perrior, Essex

The reason we have moved a lot of our competitions to 'online-only' entry is because of the space it takes up for us to include the unending rules and regulations related to competition entry in the pages of the magazine. It is much more efficient for us to include these online, rather than use half a page of valuable editorial space to inform you of all the terms and conditions we are legally obliged to share with you. However, we will now be including the line, 'Please see the website or send an SAE for a copy of competition terms and conditions – either enter online or send a postcard to...'. Thank you for raising this valid point, and

for championing the cause of our very important offline community – Estelle Hicks-Bennett, senior marketing manager

Industrial drive

I feel I must write in reply to Mike Gosling's letter accusing you of bias towards Nikon and Canon cameras (AP 21 November). Does he not realise that the vast majority of photographers use these brands and your magazine just reflects this trend? In fact, I think you probably have a larger percentage of the magazine devoted to 'other' manufacturers than the percentage of your readership that actually uses the equipment.

The plain fact is that professionals drive the industry and, let's face it, how many professionals use anything other than Nikon or Canon? Yes, I know there are some, but not enough to keep the industry going. It is perhaps a self-fulfilling prophecy, but at the end of the day Nikon and Canon make great equipment.

Comparing the Canon EOS 7D to a Fujifilm prosumer model may be a little off the mark, but try using Fuji camera to shoot a bird in flight at 8fps, with the ISO set to 6400, and see how many 'keepers' you get. A good photographer can do much more with a cheaper camera than an average photographer can

with the best gear, but give the good photographer the best gear and the results can be stunning.

Calvin Bartram, Norfolk

Better than you realise

I was interested in Clive Routley's letter (*Canon costs*) in AP 7 November. Owners of Canon (and Nikon) equipment might take comfort from my own experience.

I own a Sony Alpha DSLR. I am delighted with it, and I believe the quality of the kit lens is better, pound for pound, than that of Nikon or Canon, although this is a separate debate. I bought it chiefly because the Vibration Reduction (VR) system is in the body, thus saving, or so I thought, on expensive VR lenses.

I recently decided to buy a travel zoom lens, and was considering the Tamron 18-200mm or 18-250mm budget optics. A thorough trawl of the web revealed that these lenses were available at good prices in Canon and Nikon mounts, but would cost me between £100 and £150 more for a Sony one. I was told that the reason for this is simply that volume sales of Nikon and Canon mounts bring down the price.

So please don't moan too much about Canon's UK pricing policy. I am having to wait until everybody realises that the Sony is a better camera and the sales volume goes up!

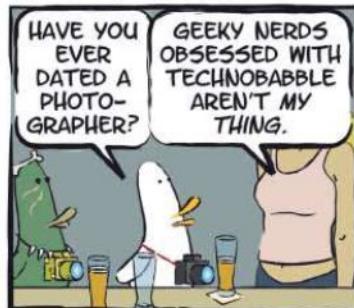
Chris Derricott, Powys

Inspiring collection

While flicking through AP 21 November, I noticed a book called *500 Poses for Photographing Women* and exclaimed out loud, 'Thank goodness, somebody has done it at last!' However, Jeff Meyer's review was not complimentary of Michelle Perkins' work, and I can't see readers scurrying off to buy a copy.

I can't comment on the contents of this particular title until I have examined it myself, but I must

What The Duck



<http://www.whattheduck.net/>

Letter of the week

wins a 20-roll pack of 36-exposure Fujifilm Superia ISO 200 35mm film or a Fujifilm 4GB media card (in a choice of CompactFlash, SD or Memory Stick)*



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fax to 020 3148 8130 or email to amateurphotographer@ipcmedia.com

* Please indicate whether you would like to receive Fujifilm film or a memory card (please state type preferred) and include your full postal address

Killer cats

I wonder if Dennis Low of Hull just coincidentally laid on the floor as the cat came casually through the cat flap with a mouse in its jaws (*APOY Round 9 Results, AP 28 November*)? I suspect that the whole picture was a setup, with someone pushing the cat through the flap from the other side.

The use of a tormented mammal in the jaws of death is, in my view, worthless in any circumstances for use in a picture. Call me an old softie, or maybe even a do-gooder, but I have never imposed any suffering to any living animal in order to gain a photograph in my life. I wonder if Dennis has any other pictures of the cat tormenting the poor mouse before it finally decapitated it, or ripped it to pieces.

I ripped the page out of the magazine straight away and put it on the fire, and if I had judged the competition such work would never have even been in the running. Don't give me all that speak about owls or weasels or tigers, and how it is just nature at work – for one who hates the very living daylights of cats, because they directly kill millions of our bird species every year, I believe they should come under the same legal criteria as dogs in the UK and be removed from our gardens and streets and prevented from wandering around freely. Check out the latest statistics regarding loss to our bird life as a direct result of these nuisances and useless so-called pets.

Perhaps we might one day arrive at the solution that Australia has: they shoot them if they are found wandering around without identification or a collar tag, if they are suspected of being feral, or if they are found wandering around in areas of special interest to wildlife.

Alex Birch, Nottinghamshire



DENNIS LOW

say that the scrapbook of portrait poses I compiled almost 50 years ago has served me well over the years. I started with newspapers and magazines, cutting out portrait photographs that appealed to me and pasted them into a jotter. The fact that I took the trouble to preserve these shots individually imprinted them on my mind and I was never stuck for an idea when shooting portraiture.

In due course these poses were adapted to suit individual situations, making me think more about lighting and shade. Soon I had a small pile of jotters packed with ideas and a nice portfolio of my own work. Studying the work of others is a useful exercise for any budding photographer, and I would thoroughly recommend the method I have outlined here to give you inspiration.

Gordon Wright, Edinburgh

Looking at the work of others is extremely valuable, and your scrapbook is a great idea. The funniest thing about the book

500 Poses for Photographing Women is that the title suggests it is the photographer who is posing, not the women! – **Damien Demolder, Editor**

There today, gone tomorrow

I work in Sheffield, and went to my local Jessops in my lunch hour to buy a standard lens for a camera I had bought on eBay. The assistant gave me the usual, 'We haven't got one in stock, but we can order one.' I replied that I had made a specific journey to the shop, and if they were going to order one I might as well buy one online.

A few weeks later I went into the same shop to buy some ISO 400 film for my camera, only to be told they didn't have that in stock! Excuse me? A camera shop that doesn't sell film? Instead, I bought some from one of your advertisers, but I can't help thinking that my local branch of Jessops will not be there the next time I go into the city.

Andrew S Redding, South Yorkshire

Back Chat

AP reader **Nigel Cliff** says that digital photography is cheaper than many think

A COUPLE of AP readers have made the case in recent issues that film is much cheaper than the digital alternative for youngsters starting photography. However, my experience as a long-standing photographer moving to digital imaging about five years ago has been quite the opposite. It is claimed that much digital equipment is prohibitively expensive; if buying new, that may well be the case, but fine cameras of only a few years in age, like the Canon EOS 350D or Konica Minolta Dynax 5D, as well as many others, can be bought for around the £200 mark from reputable dealers.

Now, while this may not match the tiny prices charged for fine film cameras (a Canon EOS 10 was going for £39 in a recent issue of AP), it is very quickly offset by the savings made when actually taking pictures. During the football season I take shots at my local amateur club, probably around 100 photographs each week, which, over a 36-week season, works out at over 100 rolls of film and a likely expenditure of between £550 and £1,000, depending on the film and developers used. As the only cost for the digital user is to recharge the batteries, suddenly the £100 saving on the

purchase price of film compared to digital looks very small beer.

Other arguments include the cost of an A3 printer and its insatiable desire for inks. Well, how many amateurs use an A3 printer, and even if that is scaled down to A4 the argument can be countered by using one of the many excellent

online printers that produce high-quality prints for a tiny cost. Let's face it, most of us print off very few shots and display much of our work online in galleries, which can also be free.

We then come into the world of computer hardware and software. Most households have computers now, many of which are highly specified and easily able to run photo-processing software. Even if they are not, cutting-edge work can easily be done with a modicum of patience. I ran Photoshop CS2 on a PC with 1GB of RAM until about six months ago and, though not Jenson Button fast, it worked. As far as software goes, Photoshop is not the be all and end all, and there are excellent products such as Elements and Paint Shop Pro coming in at the £70 mark – and that little gem The GIMP is totally free.

So, to all those young and new photographers out there, the choice is there for you: film is wonderful, but so is digital imaging. Don't be put off by the latter by the horror stories you may have heard about the hole it will burn in your wallet, because with common sense and an ability to steer clear of the latest kit, the world of digital can be your lobster.



Photo Insight

Amateur
photographer
Technique

STEVE BLOOM
EXPLAINS HOW USING
A WIDEANGLE LENS
AND CAREFULLY
CHOSEN SHOOTING
ANGLE ENABLED
HIM TO MAKE THIS
DOLPHIN LEAP OUT
OF THE FRAME

I TOOK this image in Honduras at a resort where bottlenose dolphins are kept but allowed to swim freely in the ocean. The dolphins swim alongside the boats during feeding time and this dolphin was jumping up right next to me. Sometimes when photographing dolphins the images can look a little flat because you are often shooting from a distance. I wanted to make the dolphin look 3-D and not merely a flat form on the page.

With all my wildlife photography, at the back of my mind is the desire to capture the sentience of the animal I'm photographing and this is especially true of shooting dolphins. I wanted to show that they are thinking, feeling creatures. I try to make my photography intimate but in a way that is non-threatening to the animal.

To capture the dolphin up close and to create a sense of intimacy, I had to position myself as near to the action as possible. I was standing in the middle of the boat at the edge, with the boat quite low in the water. The dolphin kept leaping up and down while I was shooting and I tried to get as low as possible – the lower you are, the more dramatic a subject looks in the frame. To capture the dolphin mid-leap and at an angle, the boat had to be slightly ahead of it, otherwise I would only have been able to capture

The AP experts

Each week, one of our team of experts of Steve Bloom, David Clapp, Tom Mackie and Clive Nichols will reveal the secrets behind one of their great images. This week it's Steve Bloom

STEVE BLOOM Wildlife
The world's leading wildlife
photographer is bringing
his expertise to AP. Steve
has written dozens of books
on wildlife photography



side-on images of my subject.

I used my Canon EOS-1D Mark II with a 16mm wideangle lens to help create this very 'immediate' perspective. The EOS-1D Mark II has an APS-H image sensor, so the 16mm lens isn't as wide as it would have been if I'd used a full-frame sensor. The effect is that the scene looks slightly more compressed. The camera has an eight-million-pixel CMOS sensor and I was amazed at the amount of detail I could capture. I blew this image up to a 1.8 metre print for an outdoor exhibition and it was so crisp. It just goes to show that while a high pixel count obviously affects the image quality when making a large print, there are other factors – such as how you process the raw file and what lens you use – that should be taken into consideration.

I wanted the front of the dolphin to be in focus with the rest of its body becoming more blurred as the image tapered off into the distance. There is a fair amount of blurring towards the back of the dolphin and you can see the movement in the tail. This helps to create a sense of depth and dynamism in the composition.

I used a fairly large aperture of around f/5.6 or f/8 to keep my depth of field quite shallow, which helped to draw attention to the dolphin's face



(see *Talking technique*, right). I tend to focus on the animal's eye because it is the main point of communication with the animal. Even though dolphins have small eyes, and in this shot the eye is actually partially shut, it was important to use this as the focal point to give the composition a central focus.

A lot of the picture consists of smoothly toned areas and the gradation of tone is subtle throughout. The surface of the dolphin looks almost like it is made from stone and it has a wonderful grey, glistening sheen.

I took this image at around nine or ten in the morning. It was a bright day, although the sun kept ducking

in and out from behind the cloud. Fortunately, the sun came out just as I was taking this shot – you can see the reflection of the sun on the dolphin's head. Judging by the reflection here, it looks as though the sun was directly behind me. The clouds helped to diffuse the light, scattering it much more evenly than if the light had been a single directional source. The water also acts as a giant softbox, reflecting the light back onto the subject – in this case the underside and left side of the dolphin. This helps to brighten the image and bring out the subtle textures on the surface of the skin. I did very little in the way of post-



processing for this image, although I would have adjusted the contrast in the dolphin if I'd thought it necessary.

Relying on the camera's automatic exposure when photographing leaping dolphins is dangerous as the white splashes of water can confuse the camera, causing it to underexpose the image and turn the whites to grey. I took an average meter reading, which helped to avoid the camera underexposing the scene.

Photographing dolphins is an incredible experience in much the same way I imagine swimming with dolphins is. It certainly makes you more aware of man's place in the wider world. **AP**



To see more images by **Steve Bloom** visit www.stevebloomphoto.com. Steve's book *Spirit of the Wild*, published by Thames & Hudson, is priced £18.95 and is available from www.stevebloomshop.com

Talking technique

A fraction of a second before I took this picture the dolphin was in the water, and a fraction of a second later it had disappeared again, so super fast reflexes are a must. I had my camera set up ready to go and held the shutter halfway down. My camera was set to predictive focus and I set the focus point to the right of the dolphin. If I'd had my focus point in the centre, the dolphin's head would have been blurred and this is the most important part of the image. I took this image handheld and quickly composed the image after looking through the viewfinder. The dolphin jumped up a few times and each time I tried to frame it to give the strongest possible composition. I had my camera positioned ahead to where I thought it might jump next, but there was inevitably an element of trial and error involved. I couldn't pre-focus on a particular spot because the dolphin might have been in a different place next time. When you are stationary and photograph a moving subject, you have to pan with your subject to keep it relatively sharp. Since I was moving with the dolphin I could track it with my camera and capture a sharp image.



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OUR WORLD

Tom Servais: Born in Miami in 1953, Servais moved to California at the age of 20 to 'find himself' and pursue surfing. After taking several photography classes, he began his career as a photographer with Surfer magazine. Fueled by the joy of turning his passion into a career, he travels the world in pursuit of an endless summer.

*Photo data: SIGMA 18-250mm F3.5-6.3 DC OS HSM,
1/1,000-second exposure at f/6.3.*



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*Vignetting (a darkening of the corners of the image) will occur if the lens is used with digital SLR cameras with image sensors larger than APS-C size or 35mm SLRs, and APS SLRs

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Reader Masterclass

Family portraits by lamplight

YOU DON'T HAVE TO USE PROFESSIONAL LIGHTS TO ACHIEVE GREAT FAMILY PORTRAITS THIS CHRISTMAS. **BOB BARCLAY** SHOWS THREE READERS HOW TO USE LAMPLIGHT AND WINDOW LIGHT TO CREATE INTIMATE, ALBUM-WORTHY IMAGES. **GEMMA PADLEY** REPORTS

WITH Christmas fast approaching, the party season is in full swing. Quite likely you will have hosted or been invited to a few festive gatherings by now, and you will probably have more planned before December is out. These get-togethers of family and friends offer numerous opportunities to create memorable portraits. More often than not you'll



L-r: AP readers Matthew, Louise and Paul prepare for the shoot

be shooting indoors, and perhaps you have tried using flash but found it dominates the scene. It is possible, however, to turn available interior light sources to your advantage.

For this month's *Reader masterclass*, Bob Barclay invited three AP readers to Nutfield Priory Hotel in Redhill, Surrey, to show them how to use ordinary lamplight to illuminate their subjects and create characterful

If you switch off your flash and use available light, you might be able to create atmospheric portraits like Bob's
18-55mm, 1/20sec at f/4, ISO 1600



images without using flash. Each reader was equipped with a Samsung GX-20 DSLR with 18-55mm and 50-200mm lenses, plus a tripod. The reader with the image judged by Bob to be the strongest at the end of the day would win a Samsung GX-20 camera worth £700.

Bob talked the readers through some key techniques. 'Window light is great for use in portrait photography because it is a soft, diffused light that subtly illuminates the face, bringing out detail in the skin,' he says.

'Try positioning your subjects so they are lit using light from nearby windows, and experiment with using lamplight to complement this. One of the main challenges is balancing the colour temperatures of the different light sources. Daylight is cooler, while tungsten lamplight is much warmer in hue. I advise using a daylight white balance, which should help balance the two types of light, but there is nothing to stop you experimenting with different white balance settings.'

Bob also advised the readers to try using a reflector to bounce the light onto their subjects and fill in any shadows. 'Make sure the eyes are well lit,' he adds. 'Eyes with sparkle make a portrait come alive. We will be working at quite slow shutter speeds, possibly 1/30sec or slower, and although we'll be using a tripod, remember that any movement will show in very long exposures.'

'To avoid blurring your subjects, increase your ISO – perhaps as high as ISO 1600 – or adjust the position of the subject to maximise the amount of light, rather than rely on very long exposures.'

AP's expert

BOB BARCLAY worked as a top Fleet Street photographer for more than 30 years, but left photojournalism in 1998 to set up his own studio and photography business in Surrey. During his career, he has covered news assignments in the UK and abroad, and got the first picture of the QE2 in mid-Atlantic as it brought troops home from the 1982 Falklands War.

Born in Scotland, Bob worked for a Scottish news agency before moving to London in 1968. He has worked for *The Daily Telegraph*, the Press Association and Express newspapers, and now freelances. To see Bob's images, visit www.robertbarclayphotography.com.





Bob says

In Paul's best image (above), he has positioned the girl at the front so she is lit by the light from outside, while the other two girls are lit by the single lamp in the centre at the back of the frame. The lamp provides just enough light to sufficiently illuminate them.

This is an interesting composition, and Paul has embraced the two different light sources to create a lovely mix of interior and exterior light. For an image such as this where there is a mix of light and dark areas, setting your camera to centreweighted metering will ensure an average exposure.

By combining these two types of light and organising his subjects in this way, Paul has created a sense of depth – he has used the interior light to draw the viewer into the picture. If he had used flash, the bright light would have flattened the image and the atmosphere and perspective would have been lost.

In his other image (below), Paul has captured the jovial atmosphere of this family group to create a light-hearted, naturalistic portrait. It is evident Paul was talking to the models because they look relaxed and are laughing.

In a scene with moving subjects, setting a slow shutter speed will capturing that movement, so be careful not to go too slow. If the subjects have their backs to the light, it is also wise to bracket your exposures to make sure you achieve a correct exposure.

Paul uses both bright light from a window and moodier lamplight to draw the viewer into the scene
18–55mm, 1/45sec at f/4.5, ISO 800

In this natural-looking shot, Paul successfully captures the joviality of the scene
18–55mm, 1/30sec at f/4, ISO 800



Paul McKie
Age 44
Lives Warwickshire
Occupation House husband
Photographic interests
Children's portraiture

Today has been a really relaxed day and Bob's tuition has been hugely beneficial. I've had some experience of portrait photography, as I have four children who are willing subjects, and I've also been asked to photograph the kids' portraits at a local nursery, but today has been a great opportunity to build on my existing skills.

I'm reasonably comfortable with the technical side of photography, but now I've learnt to be more confident when directing the models: to get the best pictures you have to be assertive. Early on I thought, 'I'll stand back and take a few pictures over Bob's shoulder', but I realised I wouldn't learn very much that way. Instead, I dived in and started arranging the models to suit the compositions I had in mind.

One of the things I wanted to try was to include the three girls in a single composition (see above). We'd taken some individual portraits and group shots, but this was something a bit different. In these shots, I used the window light as the main light source and the tungsten lamps as secondary, complementary lights. I deliberately wanted the background to be out of focus so I adjusted my aperture to create a shallower depth of field. There is nothing better than seeing someone's eyes light up when you show them the finished portrait.

Louise Spencer-Walsh



Age 31
Lives Surrey
Occupation Senior research nurse for Medicines for Children Research Network
Photographic interests Portraiture, landscapes, architecture, wildlife

Before I came along today, I was slightly worried because I'm not a very experienced photographer. It took a while to get used to using an unfamiliar camera, but once I'd got the hang of the main settings I found I was more confident when directing the models. I experimented with different white balance settings and as we moved to different corners of the hotel where the light was different, I found myself changing the ISO setting to suit.

As the day went on, I learnt more and more about how to make the most of the light in any given situation. I realised I could make my images look how I'd seen them at the time – quite natural-looking – using only the light that was available, rather than relying on flash. I took some close-up images of the girls, which I think worked well – I was pleased with the way the light hit their faces and how this balanced with the shadows. I was able to create catchlights in their eyes too, which really lit up the subjects' faces.

In terms of composition, I tried a few different approaches: I asked the models to rest their feet on chairs or tables, for example, and by crouching down low I could then create a different, interesting viewpoint. I now feel more able to shoot in different lighting conditions without relying on flash.

Below: Louise uses a brave, if slightly unusual, shooting angle to create a portrait with character

50-200mm, 1/30sec at f/4, ISO 1100

Right: A tight crop, simple backdrop and balanced lighting create a powerful expressive portrait

50-200mm, 1/20sec at f/4.5, ISO 800



Bob says

The light and shadow in Louise's best image (above) are well balanced, which is what makes the picture so strong. The right side of the girl's face is lit by window light while the left is in shadow. The window light is quite intense and it could almost be studio light, but Louise has retained enough detail in the brightest areas of the face.

I encouraged the readers to keep an eye on their LCD screens, not only to check their exposures but also to take note of where and how the light was hitting their subjects. Louise did this. She wasn't afraid to move the lamps to see what effect this would have on her composition and she had

some good ideas when it came to using the lamps to light the models. For this image she has come in close to create a very tightly framed image of the girl. There may not be much room around the subject, but the dark background means the viewer can concentrate on the girl's expression.

One thing to watch out for when shooting portraits is to avoid casting shadows across your subject's nose, as this can make it too prominent. Louise angled her camera so that the

girl's nose was not protruding beyond the side of her face.

Louise's second image (left) is taken from an unusual viewpoint – the camera angle is low and she is directly in front of her subject. It's a brave angle to use for a portrait shot, but the resulting image has lots of character. The subject is relaxed and looking away from the camera, creating a more naturalistic quality. A reflector positioned at the left of the picture helped to balance light and shadow.

It's a brave angle to use for a portrait shot, but the resulting image has lots of character



Amateur
Photographer
Winner

Bob says

The exposure in Matthew's winning image (above) is spot on. There are three light sources here: a small amount of light is coming from the window to the right of the girl, and Matthew has supplemented this by using light from two lamps positioned in front of her and to her left. He has balanced the window light with the lamplight to create an even light across the whole face.

If you look at the girl's eyes, you can see catchlights from the window light, and there is a hint of tungsten light there too. He has filled the shadow areas with just enough light to sculpt the face and create depth, as well as mood. There are no standout highlights to distract the eye and Matthew has retained detail in the hair and skin. I love how the girl's face is just appearing out of the darkness; it creates an air of mystery, which adds to the strength of the image.

In Matthew's second image (right), he has created a layered effect by staggering the girls in the frame. The

tungsten light is very powerful, but Matthew skilfully balances this with the cooler window light that is falling on the left-hand side of the girls' faces.

Bright sunlight can create dark shadows, so the best light comes from an overcast day where the light is slightly diffused, as is the case here.



Matthew Bradford

Age 35
Lives Cambridge

Occupation Composites manufacturing trainer
Photographic interests Portraiture, landscape and fashion photography

I've never done portrait photography like this before and I wasn't sure what to expect – it's quite daunting to think that all these people are expecting you to take their portrait. I didn't think I'd be able to come up with different poses for the models, but as I kept on shooting, my confidence grew and I found it was easier to think of ways to position the subjects. After the initial few shots, you settle into a flow.

One of the main challenges was remembering to switch between white balance settings. It is easy to get caught up in the shoot and not think about changing to tungsten white balance, or back again to daylight, for example.

I made a point of looking at the scene and choosing a shutter speed that would allow the best possible exposure in that particular light. When I'm taking pictures, I'll often let the camera take care of my exposure, but when you're thrown in at the deep end you learn so much more.

In the past when I have used flash, the people have either been too bright or parts of the background have been overly lit. I've learnt you can use available light to capture great images without the need for flash.

Above: Bob was impressed by Matthew's subtle use of light in this winning image

50-200mm, 1/45sec at f/5.6, ISO 1600

Below: Soft window light balances with the powerful tungsten light

50-200mm, 1/15sec at f/4, ISO 1600



In conclusion...

FROM Bob's initial demonstration using a single lamp and subject to the lively group scenes, the readers shot a range of compositions and tried combining window and lamplight in a single image.

'I demonstrated how to light a subject using a single light to show how light falls on a subject,' says Bob. 'I showed

the readers how to introduce more people into the scene and gradually build up the composition. With several people in an image, you need to be even more aware of where your light is coming from and how it is illuminating the scene. I reminded them to talk to their subjects to make them feel relaxed. If you are confident you'll end up with

much better images. It is about being direct but friendly.'

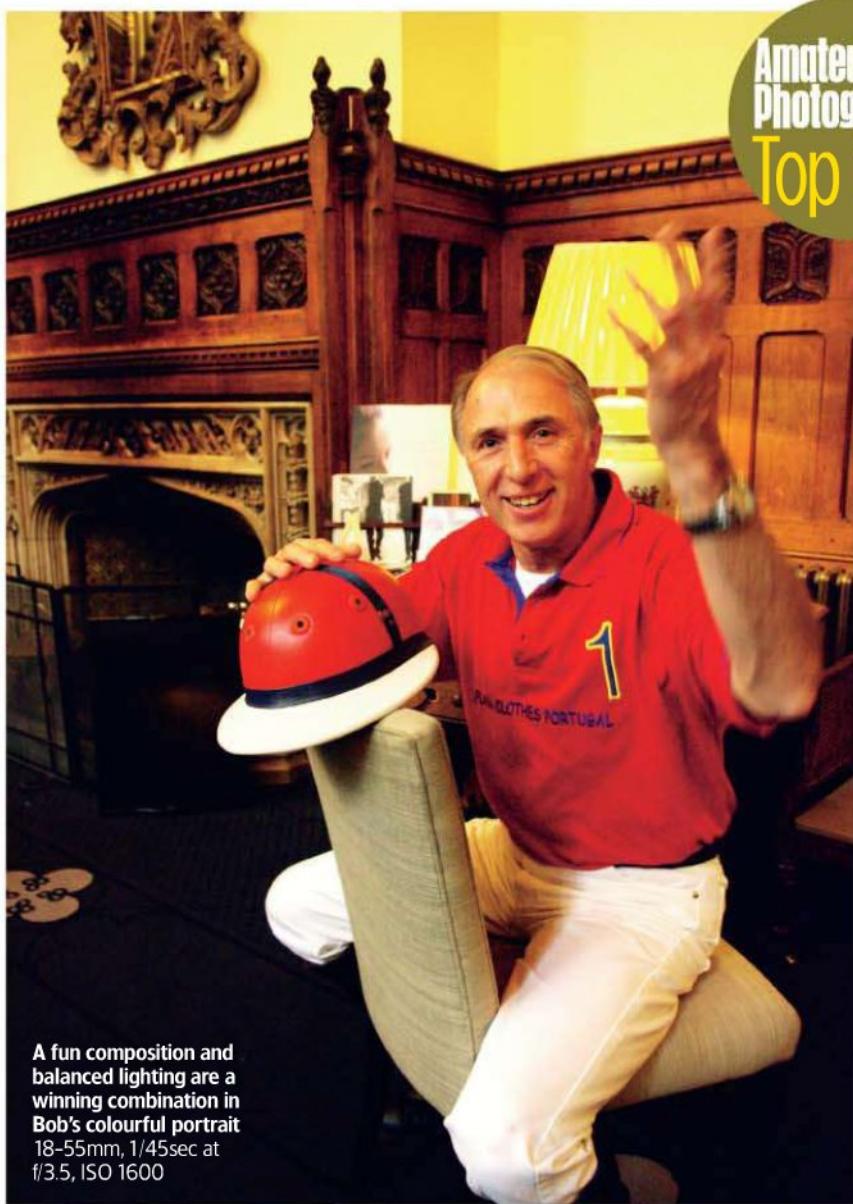
Bob encouraged the readers to move their subjects to different positions to create interesting compositions, but reminded them to adjust the position of the lamps and, ultimately, themselves if they were having trouble getting a good exposure.

'Sometimes it isn't possible

to move your subjects so you will have to change your shooting position,' he says. 'Always think about your background, too. A backdrop that complements your subject will create a stronger image. Try some close-up shots as well as wider angle shots, and think about the best focal length for the scene.'

The contrasting types of light

and limited brightness of the lamps made getting a correct exposure tricky. Bob gave the readers some final tips: 'For a single portrait, take your meter reading from the subject's face, while if it is a group shot take a reading from a mid-point between the brightest and darkest areas. This should give you a correct exposure across the entire image.'



Amateur Photographer Top tips

Top tips for family portraits using window and lamplight

1 Window light is a great way to light faces naturally, but strong sunlight can cause highlights to burn out and create areas of deep shadow. If you find the window light is too bright, position your subject so that the light doesn't fall directly onto their face.

2 Use a reflector to balance the interior and exterior light sources. Try positioning the reflector at a three-quarter angle to your subject and see how you can use it to bounce light onto your subject and fill in shadow areas.

3 When you look at a portrait you notice the eyes first, and catchlights add life to a subject's face. These are sources of light reflected in a subject's eyes – for example, the windows in Louise's image on page 21. Think about how you can capture these in your image.

4 When shooting in mixed lighting conditions, such as daylight and tungsten light, think carefully about which white balance setting you use. Using the daylight setting will make the tungsten light look warmer, but any window light will remain cool in colour; the tungsten white balance setting will make the lamplight neutral and balanced, and any daylight slightly blue. Which setting works best will depend on the combination of light in the image and your personal preference, so it's worth experimenting with different white balance settings to see what effect these have on your composition.

5 Try not to use shutter speeds slower than 1/15sec because you will pick up subject movement. Increase your ISO setting or move yourself or your subject to maximise the available light. Use the optical image stabilisation function if your camera has one.

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AP test score 85%
(24 May 2008).



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The Green Bridge of Wales, a monumental rock arch in Pembrokeshire, was photographed on a blustery wet evening in the middle of summer half an hour after sundown. It simply relies on wave textures and strong composition. Using a polariser lowered the shutter speeds just enough to feather the rough seas to great effect

Canon EOS 5D, 35–70mm, 2.5secs at f1/6, ISO 100



Whatever the weather



It's always assumed that poor light and driving rain offer little incentive for getting out with your camera. **David Clapp** argues why this dictum is not only false, but that poor weather can actually enhance your images



THERE are no poor conditions, only poor decisions. This is a sentence worth bearing in mind if you are a landscape photographer. With rain running down the windows more often than not, the slow slide into the dark Christmas months is rarely magical for us. As climate change marred my summer holidays with yet another memorable campsite soaking, the grey winter days do little but induce fidgety raw file combing and a longing for the return spring. Well, it is about six months away, so pick yourself up, grab a waterproof, some kitchen roll and fake a smile, as it is time to re-evaluate your outlook.

One morning last month I went out at dawn in driving rain. I had been out for four days out of seven specifically photographing in 'stay-at-home' weather. So was this a test of my skills or just plain stupidity? Well, I believe it's the former rather than the latter. It's easy to feel your spirits dampen in the midst of winter's soggy grip. Thumbing through photography magazines and exquisite coffee-table books can deflate your morale even more, especially when the picture taking just doesn't seem to flow. For most of us in England, the year has almost become three seasons, with winter looking bemused and ragged at best. Last winter's snow was like a dream come true for us all, but don't worry if it doesn't arrive this year as I have some tips that will get you thinking and start being positive.

Do not think that every shot needs good light, as it's simply not true. Landscape

photography can be just as successful in poor or flat light as it is in good lighting, because a strong composition can overcome poor light. A powerful, dynamic landscape photograph can be sensational even in drab conditions.

'The worst image I made is better than the best image I did not make' is a memorable quote that I received in an email from Charlie Waite. 'Chance favours the prepared mind' and 'the harder I work the luckier I get' are sayings I live by, along with my favourite, which is 'stop moaning and go and take some photos'.

If the photographic subject you choose is correct, bad weather usually enhances the outcome. Even the worst conditions, such as driving rain, can go unseen in a photograph so long as the subject is planned and the technique is well thought out. So, let's take a look at choosing your subject matter and how you should approach it.

Inland cloud

Probably the most uninspiring set of conditions for the landscape photographer is monotonous blankets of featureless cloud. Looking restlessly at the grey skies on a Sunday afternoon from the front-room window will do very little to stir your creativity, but these conditions can be extremely useful if you train your sights away from the dramatic to the more intimate.

Prime locations that benefit from these bland conditions are rivers and waterfalls. These subjects are great to shoot almost

An inspiring dawn shoot was soon deflated by dense cloud, so after a quick look at an OS map and a change of mind-set, I was walking with a spring in my step once more. This man-made weir was a great subject for experimenting with shutter speeds

Canon EOS 5D, 17-40mm, 5secs and 2secs at f/16 (exposure blended), ISO 100

any time of the year, and with overcast skies the results are always good. A sunny day is possibly the worst time to attempt a shoot at these locations, as pockets of harsh sunlight scatter across the scene causing all manner of lighting imbalance. With the cloud above softening the sun's intensity, the lighting will be even and consistent.

As waterfalls and rivers are often found inside or near forests and woodland, the lower light levels are also on your side. Slower shutter speeds mean far more creative control over water texture, which can be varied by experimenting with shutter speed, ISO and aperture. Shoot ISO 100 at smaller f-stops (like f/11-f/16) to slow shutter speeds between 1sec or as much as 10secs to produce fabulous results.

Coastal cloud

Although the chances of a cloud break will certainly pay dividends at a favoured coastal location, thick grey cloud can provide all manner of possibilities if you experiment with water movement, just like rivers and waterfalls. Uneventful sunrises and colourless sunsets are simply no excuse to sit in the car, because with the right compositions, good timing and a little luck, it's possible to pull some magic out of nowhere.

Although the grandeur of a rocky headland feature or striking lead-in lines are the number-one choice, a simple beach with or without pebbles can also work incredibly well, especially when light levels start to lower. Look for beaches that recede on an



Muted blues and purples complement the foreboding scene in a way that a colourful sunset does not. The strength of composition is the most important factor here

Canon EOS-1Ds Mark III, 14-24mm, 2secs and 1/20sec at f/16 (exposure blended), ISO 100

Although the chances of a cloud break will pay dividends at a favoured coastal location, thick grey cloud can provide all manner of possibilities if you experiment with water movement

Wizened oak trees in a high-altitude forest like Wistman's Wood on Dartmoor can be ideal subjects when thick fog sets in. A day of dull low-level cloud at the coast caused exceptionally thick fog on high ground

Canon EOS-1Ds Mark III, 35-70mm, 1sec at f/16, ISO 100

incline, and make the most of wave action by shooting straight into the movement with the camera stopped down to f/16. This 'fine-art' approach may not be what you came for, but there is nothing better than boosting your photography with a shot that surprises you.

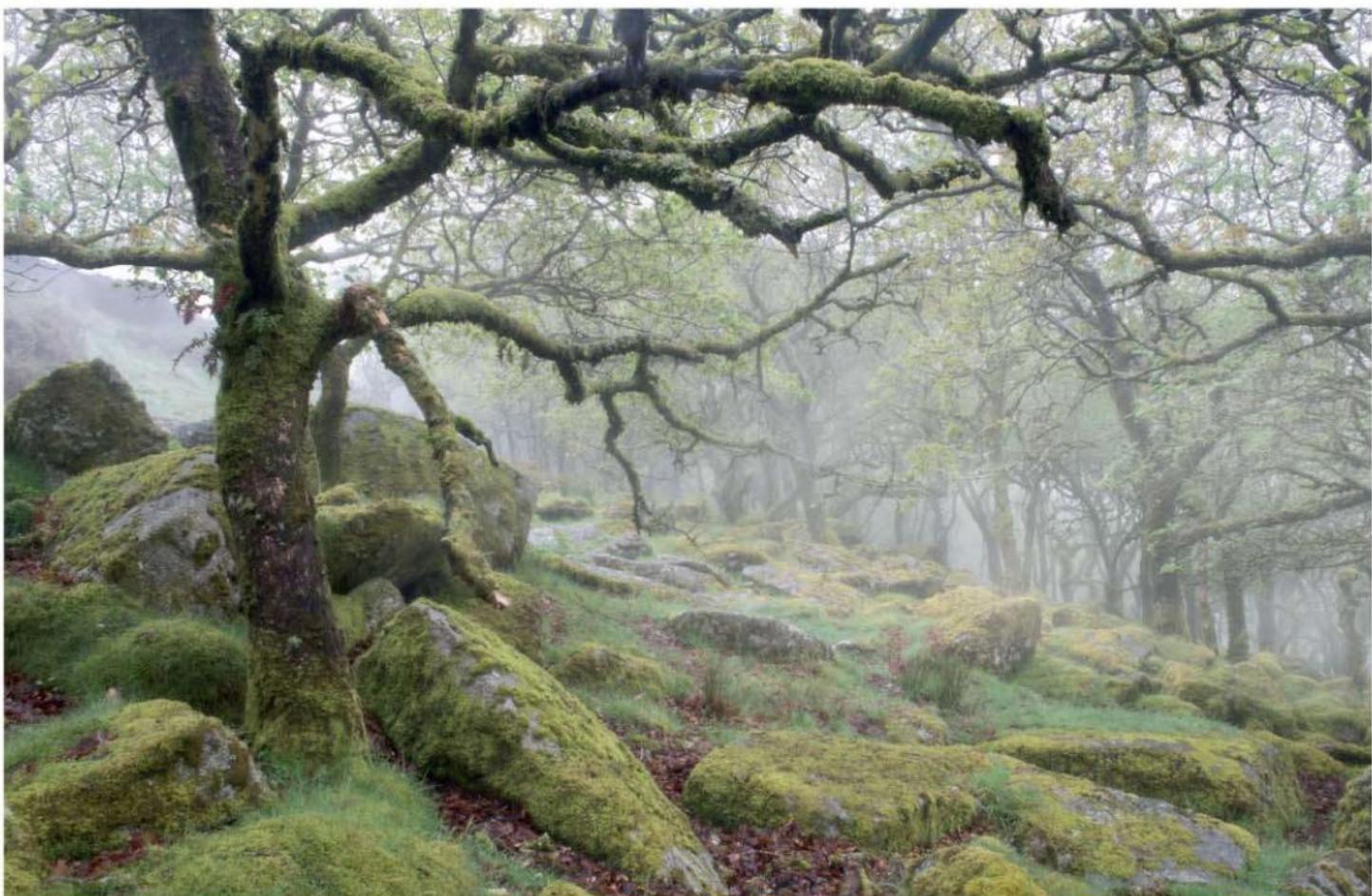
If there is the likelihood of a break in the monotonous clouds, remember that it's often happening out to sea rather than inland. I can't think of the number of times I have watched overhead clouds dispersing a few miles offshore when the cloud above remained unbroken. However, you never know what can happen and just how fortuitous the trip could become.

Heavy rain and fog

Even though it's raining where you live, it may be foggy on higher ground. Keep an eye on the online weather forecasts because even though you may feel thwarted by a soggy start, a change of altitude could make a trip out extremely worthwhile.

As I live near Dartmoor in Devon, there is a 400-metre difference in altitude that I can use to my advantage. Miserable rain and low cloud at sea level can often mean thick fog on high ground. There is nothing better for injecting atmosphere into your shots than fog, and while it may seem pointless at the start, driving to higher ground will have you grinning from ear to ear.

Look for compositions that contain depth or that diminish, like a forest clearing or a road lined with



Essential kit

If you are headed out in search of water movement, two essentials to take with you are the polariser and the ND filter.

The polariser will cut reflections from water, rock surfaces and leaves, but it is also very handy for dropping light levels by around one stop. This may be just enough to lower shutter speeds with flattering effect on streams, waterfalls and wave action.

The ND filter is a superb way of controlling shutter speeds with dramatic results. I carry a range of them – a 3 stop, 6 stop and 10 stop – with me at all times. These are essential for experimentation at the coast, with the 3 stop and 6 stop giving the most control over water texture and therefore the maximum creative possibility.

Other essentials to pack are a cable release for timing receding and approaching waves. Lock the mirror up and then strike at the right point to get dynamic effects.

Kitchen roll is also useful. When you are photographing in rain, water droplets will appear all over the front element and kitchen roll absorbs the water, unlike a lint-free cleaning cloth.

It almost goes without saying that a tripod is an absolute essential when photographing in poor light. Dull conditions mean much lower light levels, so don't leave home without one.

At the coast, extend the bottom legs and push them hard into the sand to stop the tripod sinking at the water's edge.



Leaving home at 6am in driving rain was somewhat questionable, but on higher ground the conditions were magical. The diminishing beech trees and lead-in lines take the eye into the picture as the clarity disappears into white

Canon EOS-1Ds Mark III, 35-70mm, 1sec at f/16, ISO 100

On high ground, the fog can appear in waves. Damp and soggy, the classic treacherous feel of Dartmoor can be seen to full effect in this picture. If I had convinced myself to stay at home, I would never have witnessed these fabulous conditions

Canon EOS-1Ds Mark III, 24mm, 2secs at f/16, ISO 100. A stitched panorama from 'shift stitching' a tilt-and-shift lens



trees. This will take full advantage of the drop in visibility and provide bags of atmosphere as the shot literally disappears into nowhere. Even if there is some rain, the shutter speeds can be reduced enough (by stopping the lens down to f/11-f/16) so that the rain will not be visible.

Four days of uninspiring weather

After getting out and taking photographs no matter what the weather, I think the benefits of dogged persistence are fairly apparent. My four days out in uninspiring weather produced three competent photographs that I was pleased with. They also break the sunrise/sunset conundrum, proving that images can be compelling when taken at any time of the day and whatever the weather. **AP**

To see more pictures by David Clapp visit www.davidclapp.co.uk



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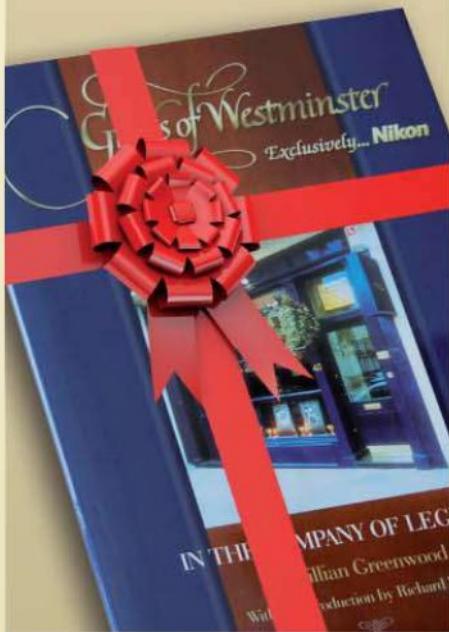
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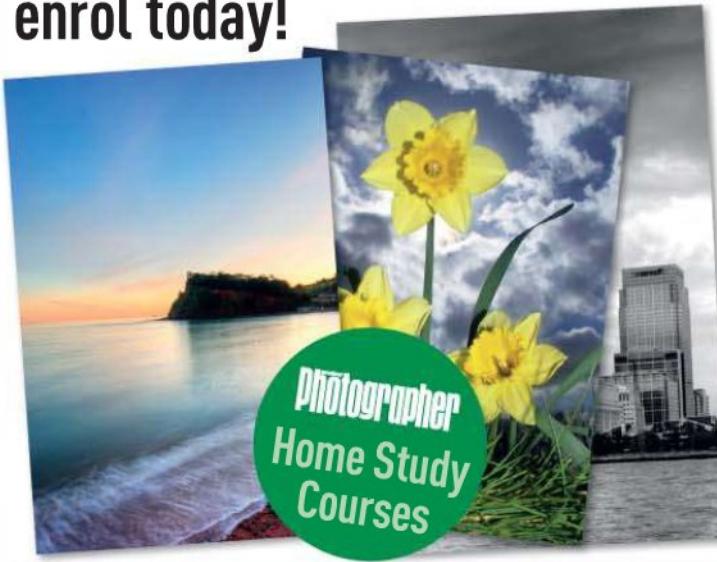
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Steve Clemson
West Midlands

Snowy field

Steve adjusted the white balance and boosted the exposure by just over 1 stop in post-processing to recreate what he had seen at the time
Canon EOS 450D, 17-85mm, 1/160sec at f/11, ISO 100

Steve Clemson West Midlands

Steve, 34, got into photography by accident. After playing around with a friend's Canon EOS 350D and amazed by its performance, he decided to buy one for himself and has never looked back. Steve has since upgraded to an EOS 450D. 'Although I have lots of "standard" shots in my portfolio, I also like to show a subject in a different light,' says Steve. 'I feel my tree image (bottom of this page) is an example of this. I love conveying a moment to others through my photography, and if I can impress just one person with an image it has served a worthwhile purpose.'



Wrought-iron bench

1 To avoid a concrete wall, Steve shot from a low angle, capturing the coloured sky through the ironwork
Canon EOS 450D, 17-85mm, 8secs at f/14, ISO 200

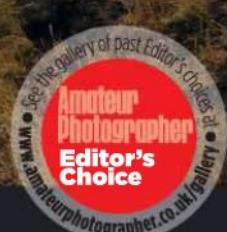
Blue beach

2 Leven Beach in Fife on a cold March morning
Canon EOS 450D, 17-85mm, 25secs at f/13, ISO 100, ND grad filter, remote cable release, tripod

Light in trees

3 'I wanted to create an eerie feel and give little indication of the light source,' says Steve
Canon EOS 450D, 17-85mm, 18secs at f/16, ISO 100, remote cable release, tripod





David Shephard Bedford

David, 57, is retired and spends as much time as he can taking pictures of wildlife. 'I've always loved wildlife photography,' says David. 'When I was a child, I used to shoot with guns, but when I got older I realised I'd rather go out and record what I saw with a camera.' David enjoys photographing all sorts of wildlife, especially mammals. A keen traveller, he tries to get away on photography trips about six times a year and has just come back from Cape Town in South Africa, where he concentrated on photographing birds. His next trip is to the Antarctic in February – his biggest trip to date – where he hopes to capture king penguins and whales.

Ibex

1 Edging forward, David got to within 50 feet of these ibex, which weren't bothered by his presence at all
Konica Minolta Dimage Z2, fixed zoom lens, 1/250sec at f/3.2, ISO 125

Bison

2 David took pictures of the bison herd, but felt the solitary bull created a more distinctive composition
Sony Alpha 200, 80-200mm, 1/200sec at f/8, ISO 100

David's shot questions the contemplative and intellectual limits of the ibex – are they really enjoying the view in the same way a human might? What they are not enjoying, because they are part of it, is the fine composition. The frame is filled with diagonal lines in parallel or perpendicular, and the clouds caught in the valley really help to illustrate the scale of the scene. It's a touching and very beautiful scene... and it was shot on a bridge camera – Damien Demolder, Editor

Polar bears

3 Soft rim lighting around the bears makes this picturesque pair stand out from the background
Sony Alpha 100, 100-300m, 1/200sec at f/4.5, ISO 200



1

Paul Harrison
West Sussex

Paul's work last appeared in the *Gallery* in AP 4 July. Paul, 47, who works as a senior buyer of medical devices, has been taking pictures for two years. He says he enjoys landscape photography because it is a way to combine his love of the outdoors and explore new locations.



3

**Icy tracks**

1 In this image taken at Coolham in West Sussex, the track is just visible beneath the ice-tipped grass leading the eye to the trees beyond
Samsung GX-20, 10-20mm, 1/4sec at f/32, ISO 100, ND grad filter, tripod

Sunflowers

2 Paul chose to shoot this on an overcast day so the bright flowers would contrast with the dark sky
Samsung GX-10, 18-250mm, 1/125sec at f/11, ISO 100, ND grad filter, remote cable release, tripod

Oilseed rape

3 Paul angles his camera so the strong foreground balances with the billowing clouds in this atmospheric composition
Samsung GX-20, 10-20mm, 1/60sec at f/19, ISO 200, ND grad filter, tripod

Beach pathway

4 The billowing grasses, winding walkway and moody sky all combine to create a mysterious image
Samsung GX-20, 10-20mm, 1/60sec at f/11, ISO 200, ND grad filter, remote cable release, tripod

4



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Expert advice, help and tips from AP Editor Damien Demolder

Appraisal

How to submit your pictures

Send up to six prints, slides or images on CD (please include the original files from the camera along with your submitted versions on your CD). Tell us a little about the pictures and, if you can, include details of equipment used and exposure settings.

Send your photographs to 'Appraisal' at our usual address (see page 3). Please enclose an SAE if you would like them returned.



Heron

Vincent Morris

Nikon D90, 200mm, f/5.6, ISO 250

Vincent has sent in this picture of a very handsome heron – it really is a great specimen. I don't know where Vincent found him, but he's in really good shape and he's striking a great pose, with his feathers very neat and clean. The light is fantastic, too, approaching at just enough of an angle to give the bird shape, while illuminating the feathers and frills of his wing and neck.

Heros are not so rare, but neither are they commonplace enough to be an everyday sight, so a good picture of such a creature will always get our attention. This is a good picture, but it also demonstrates how we need to look very carefully at our backgrounds before we settle down in a comfortable spot. The light is great on the bird, but the direct sunlight is creating a mass of sparkles in the bubbles of the foaming shore – and like a host of stars in the night sky they draw the eye and create a bit of a distraction. As the sparkles go more and more out of focus they get bigger and bigger, morphing into the type of doughnut shapes one gets when using a mirror lens. And



Original



Edited

Follow my lead

Victor Burnside

Olympus E-510, 40-150mm, f/5.6, ISO 100

In what has turned out to be a water-based theme this week, Victor has sent me the most fantastic, happy, picture postcard/greetings card of a swan leading her five cygnets through a field, with all their cute fluffy heads and eyes craning around to see where mum is and where they are all going. The contrast between this majestic mother and her fluffy, clumsy, cute little brood has all the ingredients needed for an 'Ahhh' picture. It's a

great composition: Victor has got down low and shot on their level, and a nice background sets the scene without being distracting. The birds are in focus enough that you can see exactly what is going on, yet the one at the back is soft enough to give us a sense of depth. It's very nicely done.

If I were going to be picky, all I'd say is that if Victor had come up just a tiny bit higher he would have avoided having the mother swan's head bursting out of the light green area, which does look just a bit uncomfortable. Plus, while the picture is fantastic, the print is a bit flat. I can see that Victor has used a little pop of flash to fill in the shadows,

which was a very good move, but I think the picture could still do with a little more contrast.

What I've done, therefore, is scan the print and add some more midtone contrast using the Curves tool. I set two adjustment points either side of the midtone and very close to the centre of the curve. I then pulled the darker midtones down a tiny bit and pushed the lighter midtones up a little. This gives the middle of the tonal range a bit more 'oomph' without affecting the black & white points, which are fine. It is supposed to be a soft picture, so I didn't want to go too mad; it just needed a little lift. It's very nice, so well done.

**See your
pictures
in print**

Damien's picture of the week wins a £50 Jessops store voucher. The two runners-up each win a £25 voucher to spend on photo books from Jessops' online service at www.jessops.com

JESSOPS
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GC The light is great on the bird, but the direct sunlight is creating a mass of sparkles in the bubbles **GG**

as they get bigger they fight harder with the subject matter.

It doesn't help, either, that the picture has been a little over sharpened. Looking closely, it is clear that Vincent has cropped his original image quite heavily to make the heron fill the frame. There is nothing wrong with a bit of cropping, but it does lower the resolution of the remaining image when it is blown up. Cropping and magnification have also made those specula highlights bigger and brighter, and show that some of the finer details of the bird's feathers have not been recorded. It wasn't necessary to fill the frame here, and Vincent might do well to go back to the original and crop less. Including information about the bird's surroundings is always interesting. It will also allow more space in front of the bird and produce a cleaner result.

Jump

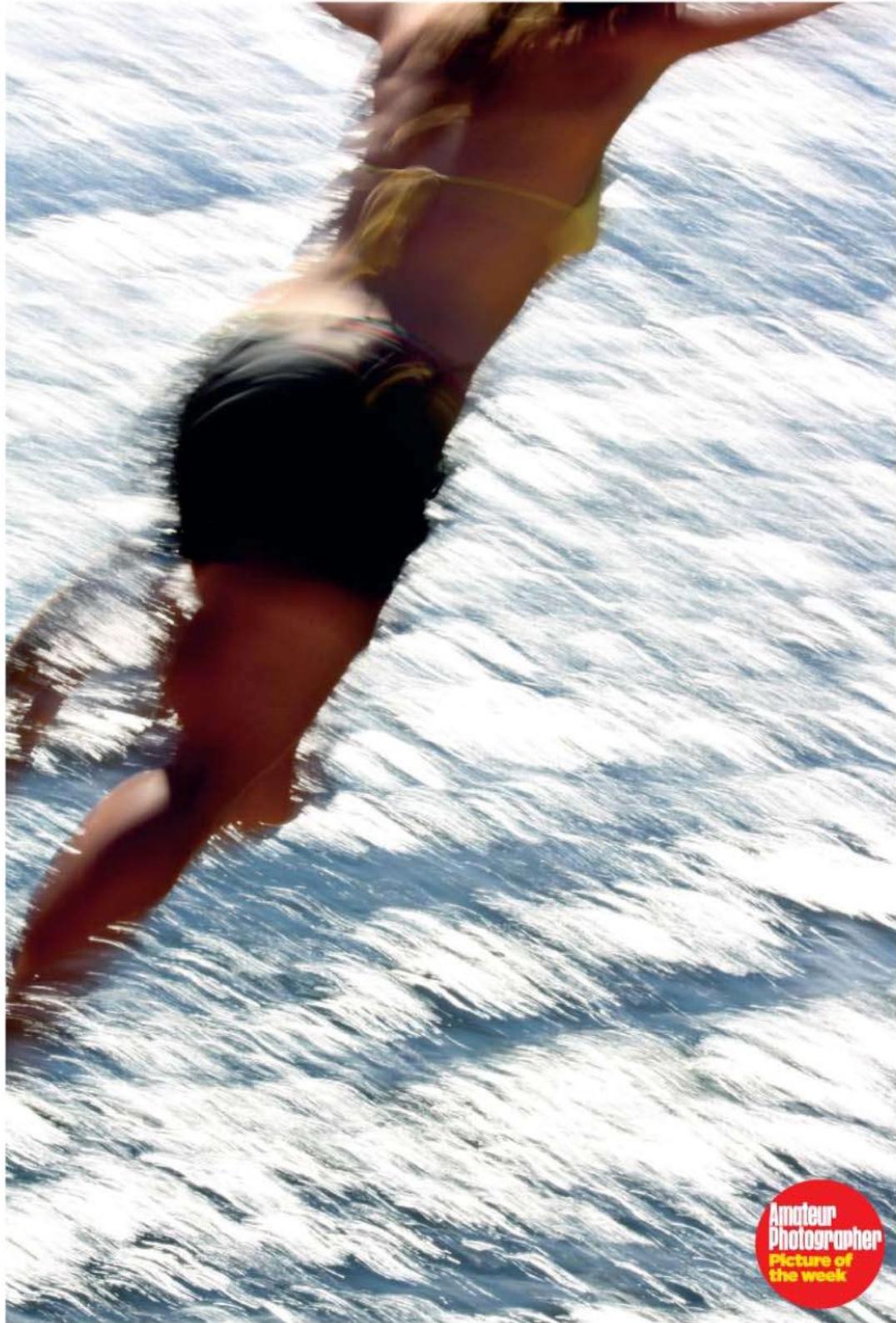
Phillip Morton

Canon EOS 1000D, 80mm, 1/13sec at f/32, ISO 100

Phillip is only 14 years old and says he started taking pictures about two years ago because of his dad, who is mad about photography. In fact, his dad won our Amateur Photographer of the Year competition in 2002, something Phillip says he reminds him of whenever his dad thinks Phillip has forgotten. Phillip's goal, he says, is to come up with interesting shots that break the rules in a creative way, and he has been quite successful in most of the pictures he has sent me.

This picture was taken at Point Walter in Perth, Australia. He says that it is a look that he wasn't going for, but that he's now grown to like it. I can see why: it stood out immediately from the contact sheet as it is completely blurred, but in this case it is a bonus. It really shows the movement in the scene, as the girl jumps into the water; it gives a sense of a fleeting moment where, as you turn your head to glance over, your eyes are moving and so everything is blurred.

The trick to this kind of shot is



**Amateur
Photographer
Picture of
the week**

to create enough blur to give that sense of movement, while retaining enough sharpness to show exactly what is happening. That is precisely what Phillip has done. The girl is sharp enough that you can make out what she is, while the water is a complete jumble of blue and white lines. Phillip's shutter speed of 1/13sec has obviously proved to be exactly right to

create this look, while the sharpness comes from everything being in focus, which has been achieved with a small aperture of f/32. The blurring of that sharp detail has created the strong pattern of those diagonal lines. I think it's an absolutely fantastic picture, and Phillip has a bright photographic future ahead of him. That is why this is my picture of the week.

GC The girl is sharp enough to make out what she is, while the water is a jumble of blue and white **GG**

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TESTS

Welcome to our test, reviews and advice section. Over the next few pages we will present this week's equipment tests, reader questions and technique pointers

Our guarantee to you

All our tests are conducted by people who understand the product area, as well as photography. We aim to discover any shortcomings, as well as finding those aspects that deserve praise. All our tests are thorough, honest and independent

Tamrac ZipShot tripod £49.99

OCCASIONALLY a product comes along that makes you think, 'What a great idea. Why has no one thought of that before?' The Tamrac ZipShot tripod falls into that category.

The ZipShot's lightweight aluminium legs fold into three sections and can spring open, creating a tripod with a height of 112cm. The effect is very similar to the flexible poles that are used in the structure of dome tents.

A small ball head attaches to the tripod that allows you to fit a camera and lens weighing up to 1.35kg. In practice, though, I wouldn't really want to use a camera that weighs much more than around 750g, as this tripod is really for compact and entry-level DSLR cameras.

In the AP office I managed to take an image with a 1sec exposure time using the ZipShot, although I had to use the camera's self-timer as the tripod has a tendency to wobble for a few seconds after you have set the camera.

However, the ZipShot is not meant to replace a conventional tripod. It is an extremely lightweight and portable support that can easily be taken on holiday. Best of all, its height makes it more usable than a table-top tripod. While it doesn't allow you to shoot images with very long exposures, it will offer support for those times when you want some added support shooting at speeds between 1sec and 1/30sec, or when you need to take a quick self-portrait. **Richard Sibley**

● For more information visit
www.intro2020.co.uk



Micro verdict
A neat device at an affordable price to take on your travels



Snapfish Square calendar £18.99

YOU'VE still got a few weeks left if you want to design your own calendar for 2010. Snapfish offers three different types of calendar, starting at £14.99 each. The Square wall calendar featured here measures 12x12in and you can select from a huge range of different templates and backgrounds.

I opted to create a simple calendar with one or two images shown each month, but up to three images and text can be displayed. Even better is the way that individual dates on the calendar can be customised by adding your own images or text. For example, you could add an image of a person to a specific day to remind you of their birthday, or add a picture of a beach to denote your annual holiday.

The calendars come spiral bound with a glossy cover. All the images are well reproduced and are printed on thick, lustre paper.

If you order by 16 December 2009 you can even get the calendar as a last-minute gift for someone this Christmas.

Richard Sibley

Micro verdict

Well printed with a huge number of different templates



Forthcoming tests

In the next few months AP hopes to run the following equipment through the most rigorous testing procedures in the industry...

Nikon D3S	Jan
Sony Alpha 850	Jan
Canon PowerShot S90	Jan
Canon EOS 7D vs	Jan
Pentax K-7	Jan
Olympus E-P2	Jan

System requirements

PC: 1.6GHz or faster processor, Microsoft Windows XP (with Service Pack 2 or 3), Windows Vista, or Windows 7, 1GB of RAM, 2GB of available hard-disk space, colour monitor with 16-bit colour video card, 1024x576-pixel monitor resolution at 96dpi or lower, Microsoft DirectX 9 compatible display driver, DVD-ROM drive

Web features require Microsoft Internet Explorer 6-8 or Mozilla Firefox 1.5-3

Mac: Multi-core Intel processor, Mac OS X v10.4.11 through 10.5.8 or Mac OS X v10.6, 512MB of RAM (1GB recommended), 64MB of video RAM, 2GB of available hard-disk space (additional free space required during installation), 1024x768 display resolution, DVD-ROM drive, QuickTime 7 for multimedia features



This screen greets you when Elements 8 is opened. It provides access to the Organizer and the Editor, as well as offering a tour of the key features

Purchasing options

Purchasing options A free 30-day trial is available for download from www.adobe.com

Adobe Photoshop Elements 8 Full version (boxed CD) £79.81, Full version (download) £80.91, Upgrade (boxed CD) £62.11, Upgrade (download) £65.62

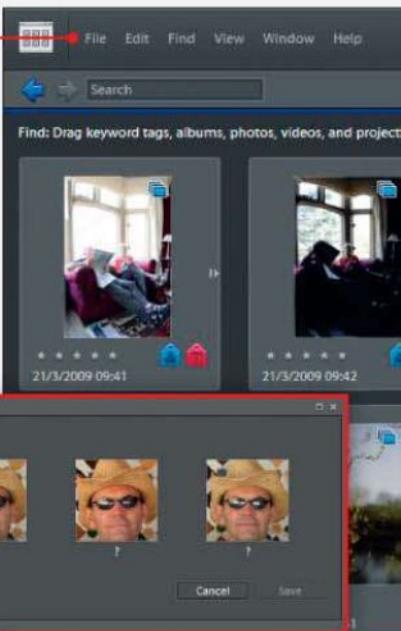
Adobe Photoshop Elements 8 & Adobe Premiere Elements 8 (PC only) Full version (boxed CD) £114.17, Full version (download) £120.63, Upgrade (boxed CD) £94.07, Upgrade (download) £99.39

Organizer screen

This is the hub of Elements on a PC, as it's used to organise, tag, find and select images

Menu bar

Elements' main controls can be found under the headings in this menu bar



People Recognition

This icon gives access to the People Recognition system. It looks for faces within images and asks the user to name the people shown. Then, when it is run again in the future, it suggests names for the people it has recognised



Workspace

Thumbnails of the selected images are displayed here

Part 1

What's new

The latest version of **Adobe Photoshop Elements** is a powerful image organiser and editor that can help you keep track of images and make complex adjustments very easily. Even if you already have Photoshop CS4, Elements 8 has something to offer. In the first part of our new series, we introduce Adobe's most recent offering

The cover of the Adobe Photoshop Elements 8 software box. It features a large image of a woman in a white dress standing in a field. The text on the box includes 'ADOBE PHOTOSHOP ELEMENTS 8', 'Extraordinary photos. Amazing stories.', and 'The complete solution for your photos.'



NOT too long ago, if you were serious about digital photography you had to have a copy of the full version of Adobe Photoshop; the Limited Edition (LE) versions and early Elements incarnations just didn't cut the mustard. Despite the high price of the software, it was amazing how many enthusiasts managed to get hold of a copy – by hook or by crook. Fortunately, Adobe has done a lot of work on what was originally a truncated version of Photoshop, and the latest edition of Photoshop Elements has plenty to offer even very experienced digital photographers, and all at an affordable price. In this new monthly series, we will explain how to get

Thumbnail size adjuster
Slide this to the left to see more, smaller thumbnails, or to the right for a larger preview of fewer shots

Module tabs
Move between the modules by clicking on these tabs at the top of the task pane. Selecting the Fix option gives access to a collection of simple image adjustments (shown above). The dropdown list of the Edit tab reveals the options of Full Edit, Quick Edit and Guided Edit, plus Video Edit for Premier Elements users

Tags
Image tags are listed in this pane. Tags can be added to images by selecting the required files and dragging them to the appropriate tag or dragging the tag onto the images. Either way, it's quick and easy to use. Clicking on the empty box next to the tag icon reveals only those images with that tag in the workspace

the best from Adobe Photoshop Elements 8 and show how it can save you time and effort, even if you already have a copy of Adobe Photoshop CS4.

In January, we will take a closer look at the Organizer and explain how image organisation can start at the import stage to make it easier to find the shots you want in the future. We will also explain how to stack and tag images and why you should do it, as well as make use of Elements 8's automatic sorting features. In subsequent months we will explain how to use the Quick Fix, Guided and Full Edit modes, process raw images, create beautiful monochrome images, and produce slide shows, calendars and web galleries direct from the

software. But first, let's take a look at the general layout and workflow of the software, followed by what's new in version 8.

The Elements workflow

For Windows users, Elements 8 is divided into four modules called Organize, Fix, Create and Share. It is designed to facilitate the download, organisation, adjustment and output of digital images that are captured on a digital camera or via a scanner.

The Organizer, where images are previewed, sorted and tagged, is now separate from the main section, where images are adjusted and photographic creations are made ready for sharing. Switching between the two areas is simple: it's just a case

of clicking on the appropriate tab. Any of the modules can be accessed from either the Organizer or the Editor.

The Editor

There are three ways of editing images from within the Elements 8 Editor: Full Edit, Quick Edit and Guided Edit. As the name might suggest, Quick Edit (aka Quick Fix) is useful for making swift, simple adjustments to the brightness, colour saturation, white balance and sharpening of an image using basic slider controls. There may be occasions when this is useful for enthusiasts, but on the whole it is aimed at the less experienced photographer.

The Guided Edit option offers step-by-step wizards that take the user through making specific adjustments

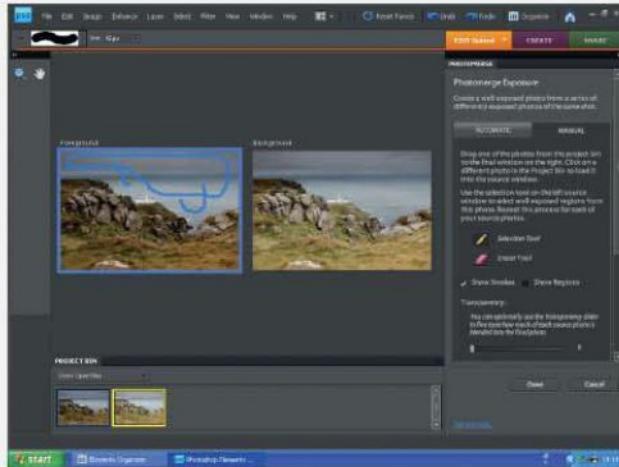
such as altering the contrast, retouching dust marks, and using the Photomerge tools. It's useful for those unfamiliar with Elements 8.

The Full Edit is where most enthusiast photographers make adjustments to their images, but it also provides some assistance in the form of Smart Brushes that can make automatic selections and apply treatments in one step. It can make very light work of improving the skin tones or whitening teeth in a portrait image, or adding a blue sky to a landscape. We will examine these more closely at a later date.

Creating and Sharing

Elements 8 is designed to provide a complete workflow





The new Photomerge Exposure control has manual and automatic options for combining up to 20 images to create a perfectly exposed composite



Elements 8 produced this result automatically, but I also experimented successfully with combining the dark sky and the lighter foreground

 for photographers, helping to import, organise, adjust and print images. The Create module simplifies making complex printing layouts for collages or books and creating slideshows and so on, while the Share module assists with saving images to CD, sending images by email and publishing them in web galleries.

Elements 8 vs Photoshop CS4

A boxed CD of Adobe Photoshop CS4 costs £614.10 and, naturally, there are a few things it can do that Elements 8 cannot. However, it's worth bearing in mind that Windows users get the benefit of Elements' superb Organizer, which makes light work of organising

and locating images. Photoshop CS4 allows greater freedom over curves adjustments than Elements 8, but the latter does feature four sliders that enable the shape of the curve to be manipulated, which is sufficient for most instances. The masking available in Elements 8 is also a bit more limited, but work-arounds and layer masks are available, as are adjustment layers for non-destructive editing.

New in Elements 8

Perhaps the biggest change from Elements 7 to Elements 8 for Windows users is the separation of the Organizer from the main software package. This now runs as an independent package and can be used

Full edit workspace

This is where most enthusiasts make adjustments to images

Options bar

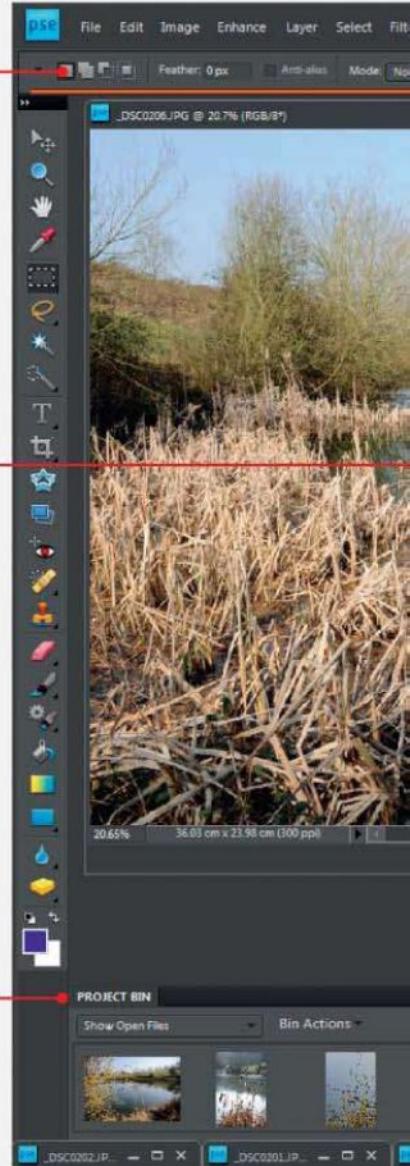
The settings for the selected tool are displayed under the menu bar. They may be adjusted by selecting the appropriate dropdown options, or typing the required figures into the boxes

Workspace

Open images may be dragged from the Project bin into the Workspace ready for adjustment

Project bin

Open images are displayed in the Project bin



to access and organise both stills and video files prior to opening them in Editor (video files are edited in Premier Elements). The Organizer isn't part of the package for Mac users and Adobe recommends that iPhoto, which is supplied as standard on Apple computers, is used instead.

Adobe has been promising to introduce a face-recognition system to Elements for a few years and the Elements 8 Organizer debuts People Recognition. This system takes a little bit of training as you have to supply the names of the people's faces that it finds and confirm it has correctly identified them when it starts to work more independently. Once this is complete, the Organizer can

automatically identify images that contain faces and tag them appropriately. Correct tags can be accepted, and incorrect ones corrected. This system makes it easier and faster to tag numerous images, which in turn speeds up finding images of friends and family.

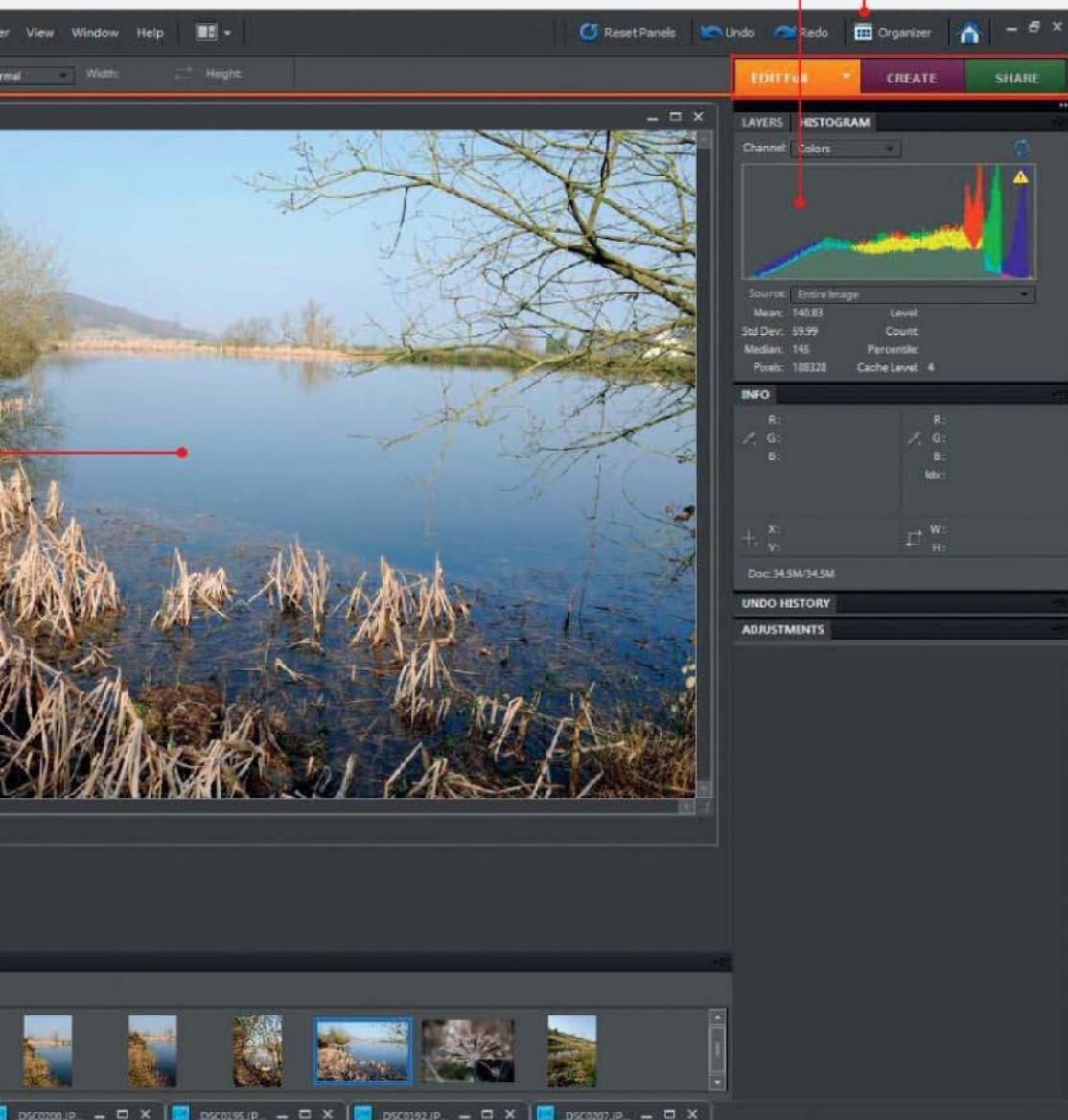
Adobe has also introduced the Auto-Analyzer, which looks at factors such as sharpness and automatically tags images as the highest quality shots. This is likely to be of more interest to novice photographers than enthusiasts, but it could help find the best shots from an extensive shoot.

Novices may also appreciate that it is possible to make quick edits to images while viewing full-screen previews



Task pane

Use the dropdown list under Window in the menu bar to select which palettes are displayed in the Task pane



Organizer

Access the Organizer from the Editor via this icon

Create

Prints may be made directly from the Editor, but the Create module simplifies some common tasks



from within the Organizer.

One of the most interesting additions made with Elements 7 was the enhancement of the Photomerge technology. Previously, this was used to make panoramas and joiners, but with Elements 7 it was possible to combine areas from two or more images to create a composite that excludes moving elements. It's useful for shots taken in busy cities when you want a tourist-free image. Elements 8 introduces a new strand to Photomerge: the ability to combine images with different exposures. Adobe intends this to be used to combine images, perhaps taken with and without flash, to produce natural-looking results rather than

to make images with an overt HDR (high dynamic range) appearance.

Adobe introduced content-aware image resizing, or cropping, with Photoshop CS4 and it has now found its way into Elements with Image Recompose, under Image in the menu bar of version 8. Although it doesn't work perfectly with every image or crop, it enables the user to specify which parts of an image should be protected from any size or shape changes so they are not distorted when a transformation is applied.

Finally, there are a few new templates to help with creating print layouts, leaflets, posters and so on from your images. **AP**

Version comparison

Manage and organise images

8	7	6
Yes	No	No
Yes	No	No
Yes	No	No

Find your best photos and video clips with the Auto-Analyzer
Find photos of specific people with automatic People Recognition
Edit photos in full-screen mode directly from the Organizer

Edit

Recompose photos to any size without distorting key subjects	Yes	No	No
Easily clear a scene of unwanted, moving elements with Photomerge technology	Yes	Yes	No
Create correctly exposed images with Photomerge technology	Yes	No	No
Preview a range of adjustments before choosing the best one	Yes	No	No
Whiten teeth and make skies bluer with Smart Brush tools	Yes	Yes	No
Simultaneously select an area and apply effects with a single brushstroke	Yes	Yes	No
Fix redeye and improve skin tones with one click	Yes	Yes	Yes

Create and share

Share photos via an iPhone

Yes	Yes	No
-----	-----	----

GXR

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* 35mm equivalent

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Micro verdict

The Strobies Portrait kit adds real value to a multiple flash TTL outfit

AP Test
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Canon EOS 7D vs Nikon D300S

The enthusiast-level **EOS 7D** is Canon's first real response to the challenge from Nikon. We look at how it fares against the **D300S**

Angela Nicholson
Technical Editor

BACK in December 2008, when I was testing the Canon EOS 5D Mark II, I remarked to Mike Owen, Canon Europe's CCI Photo Products team leader, that I was surprised Canon hadn't introduced a new AF system that would bring the camera a little closer to what Nikon was offering enthusiast users at the time. His response was that Canon was aware of the perceived gap between the AF systems of the two companies. So for several months I expected to see an enthusiast-level Canon DSLR with something to entice keen sports and wildlife shooters. I also hoped that Canon might realise that enthusiasts expect a little more in the way of high-end spec for their money these days.

Almost a year later Canon

introduced the 18-million-pixel EOS 7D, which, in addition to built-in wireless flash control, has a 19-point AF system that includes features from Canon's professional-level DSLRs and enables the photographer to specify how it responds. It seems that Canon has finally woken up to the fact that its crown is being stolen from under its nose and is attempting to re-establish itself as king of the DSLR market.

Although the Canon EOS 7D has around six million more pixels on its sensor, its logical competition is the 12-million-pixel Nikon D300S, especially given the recent drop of just under £500 in the street price of the Canon camera. However, comparisons are about more than money and numbers, and in this test I will try to find out which is the best all-rounder for enthusiast photographers.

Features

The Canon EOS 7D and Nikon D300S sit at the top of their manufacturers' APS-C-format DSLR

range, but while the D300S has a respectable effective pixel count of 12.3 million, the EOS 7D has a more impressive count of 18 million. This means that files taken on the EOS 7D at 300ppi will measure 17.2x11.5in (43.9x29.3cm) in print, which is 3in (7.6cm) longer and 2in (5.2cm) wider than prints from the D300S made at 300ppi. Also, provided the noise is controlled well – and our first test of the EOS 7D indicates that it is – the Canon camera should be able to capture more detail and give users greater scope to crop and selectively enlarge images. However, for many users 12 million pixels are sufficient and any more just increases the amount of data filling up memory cards and computer hard drives.

Nikon first introduced its scene-recognition system that links the AF, metering and white balance systems in 2007, and it is present in the D300S. It has proven itself very effective in helping the camera achieve

Canon EOS 7D
Enthusiast-level DSLR



- 18 million effective pixels
- Live View on 3in, 920,000-dot LCD screen
- 1920x1080p (Full HD) video recording at 30fps
- 19 AF points
- Street price £1,230 (body only)

Nikon D300S
Enthusiast-level DSLR



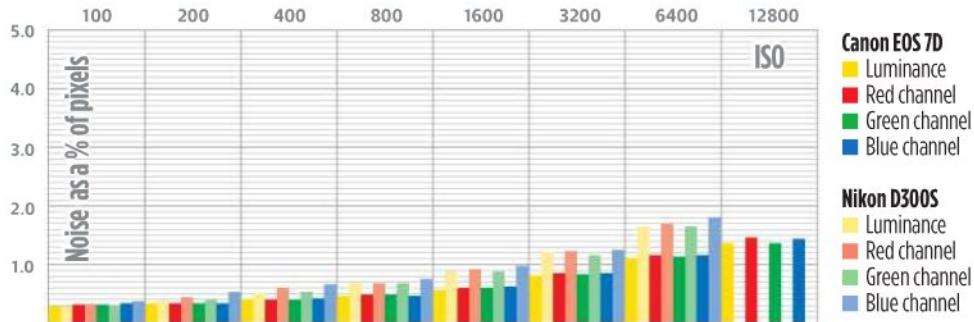
- 12.3 million effective pixels
- Live View on 3in, 920,000-dot LCD screen
- 1280x720p (HD) video at 24fps
- 51 AF points
- Street price £1,200 (body only)

Resolution, noise and sensitivity

According to our software analysis of images from the Canon EOS 7D and Nikon D300S, JPEG files from the Nikon camera with the noise reduction in its default setting contain more noise at ISO 6,400 than the EOS 7D images do at ISO 12,600.

While the JPEGs produced by the Canon EOS 7D at ISO 6,400 often benefit from sharpening on the computer, shots from the Nikon D300S at the same setting are very granular and Unsharp Mask (USM) can only be applied at a low level. Fortunately, though, in most cases this is all that is required.

Bearing in mind the criticism that was levelled at Canon over the amount of noise in images from the 15.1-million-pixel EOS 50D, the manufacturer has clearly put a lot of work into minimising

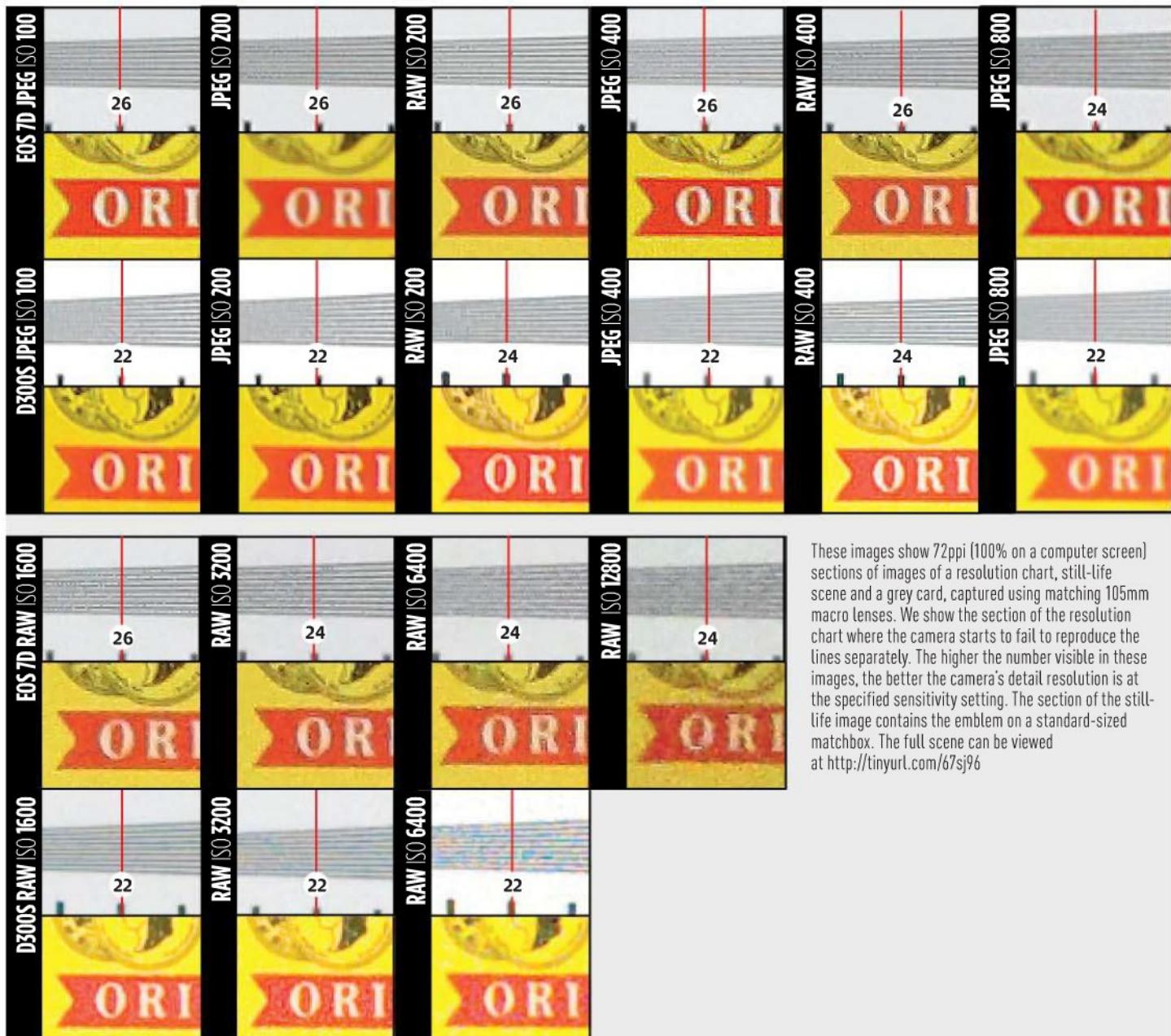


noise and banding in high-sensitivity images from the EOS 7D. At ISO 12,800 the JPEGs are, not surprisingly, quite soft and in some cases smudgy, but they sharpen reasonably well and are still impressive, so A3 prints are possible

in many situations. As usual, the most detail is recorded in raw files and when the high-sensitivity noise reduction is turned off with JPEG files.

Although the D300S is capable of recording a high level of detail for a

12-million-pixel camera, the impact of the extra six million photoreceptors on the EOS 7D sensor cannot be denied. Consequently, images from the EOS 7D contain more detail across the entire sensitivity range.



These images show 72ppi (100% on a computer screen) sections of images of a resolution chart, still-life scene and a grey card, captured using matching 105mm macro lenses. We show the section of the resolution chart where the camera starts to fail to reproduce the lines separately. The higher the number visible in these images, the better the camera's detail resolution is at the specified sensitivity setting. The section of the still-life image contains the emblem on a standard-sized matchbox. The full scene can be viewed at <http://tinyurl.com/67sj96>

Data file

Focal points

Continuous shooting

With the supplied rechargeable Li-Ion EN-EL3e battery installed, the D300S can shoot continuously at up to 7fps. However, when the optional Multi-Power MB-D10 battery pack and rechargeable Li-Ion EN-EL4a battery are used, this is boosted to 8fps. The Canon EOS 7D can achieve this impressive rate, without an additional power pack, for up to 126 large fine JPEGs with a UDMA 6 CF card in a single burst. Meanwhile, the D300S is capable of shooting 100 of the largest, highest quality JPEGs in one go with the same card.

Wireless flash

While Nikon has built wireless flash control into its high-end DSLRs with pop-up flash units for some time now, the EOS 7D is the first of Canon's DSLRs to feature it. Both cameras rely on the integral flash firing a pre-flash to trigger the remote flashguns.

Dual memory slots

Nikon D300S users who shoot video and stills may appreciate the camera's dual card slots (CF and SD or SDHC), and the fact that movies can be saved on one card while stills are routed to the other, to help with file organisation. The EOS 7D has a single CF card slot.



Canon (UK), Woodhatch, Reigate, Surrey RH2 8BF.
Tel: 01737 220 000.
Website: www.canon.co.uk



Nikon UK Ltd, 380 Richmond House, Kingston upon Thames, Surrey KT2 5PR.
Tel: 0208 541 4440.
Website: www.nikon.co.uk

RRP	£1,699.99	£1,499.99
Sensor	APS-C-format Canon CMOS with 18 million effective pixels	APS-C (DX-format) CMOS with 12.3 million effective pixels
Output size	5184x3456 pixels	4288x2848 pixels
Focal length mag	1.6x	1.5x
Lens mount	Canon EF (EF-S compatible)	Nikon F
File size	Approx 25MB raw (14 bit), 7.65MB approx (high quality, large JPEG) on card	Approx 25MB raw (14 bit), 4MB JPEG (high quality, large)
File format	14-bit raw, JPEG (two levels of compression available), S-RAW1, M-RAW, JPEG + raw (or S-raw or M-raw) simultaneously	Raw, JPEG, raw + JPEG simultaneously, choice of uncompressed, lossless compressed or compressed, 12 or 14-bit raw files
Compression	Two-stage JPEG	Two-stage JPEG
Colour space	Adobe RGB, sRGB	Adobe RGB, sRGB
Shutter type	Electronically controlled focal-plane	Electronically controlled focal-plane
Shutter speeds	30-1/8000sec in 1/3 or 1/2EV steps plus B	30-1/8000sec in 1/3 steps plus B to 4mins
Max flash sync	1/250sec default or 1/8000sec with compatible EX series Speedlites	1/320sec in Auto FP mode with integral flash or 1/8000sec with compatible SB Speedlights
ISO	ISO 100-6,400 expandable to ISO 100-12,800	ISO 100-1600 plus ISO 3200 'Hi' setting
Exposure modes	PASM, Creative Auto, plus three custom modes	PASM plus movie
Metering system	63-zone evaluative, centreweighted, spot (approx 2.3%) and partial (9.4%)	3D Matrix Metering, centreweighted, spot
Exposure comp	±5EV in 1/3 or 1/2EV steps	±5EV in 1/3 EV steps
Exposure bracketing	3 exposures in 1/3 or 1/2EV steps. Also flash bracketing	±5EV over 3, 5 or 7 exposures in 1/3 or 2/3EV steps
White balance	Auto, 6 presets, plus 1 custom setting and Kelvin adjustment	Auto, 7 presets (all with fine-tuning), 4 custom settings, plus Kelvin setting
WB bracket	Yes, 3 frames in ±3 steps with B/A or M/G shift	Yes, 2-9 frames, in 10, 20 or 30 mired stops
Drive mode	Single, continuous high/continuous low, self timer (2 or 10sec delay), 8fps max for 126 large fine JPEGs or approx 15 raw files	Single, continuous Hi/Lo selectable, 6fps for 100 frames (JPEGs and 12-bit NEF), 2.5fps (14 bit NEF)
LCD	3in Clear View II TFT with 920,000 dots and 160° viewing angle	Fixed 3in TFT with 920,000 dots and 170° viewing angle
Viewfinder type	Pentaprism	Optical pentamirror
Field of view	Approx 100%	Approx 100%
Dioptre adjustment	-3 to +1 dioptre	-2 to +1 dioptre
Focusing modes	Manual, one shot AF, AI servo AF, AI focus AF and contrast-detection AF in Live View mode	Manual, single shot AF, continuous AF and contrast-detection AF in Live View mode
AF points	19 points selectable individually or automatically in reflex mode, roaming-point in Live View mode	51 automatically selectable points, single vari-zone selection
Focusing screen	Fixed with transmissive LCD	Type B BriteView Clear Matte screen Mark II
DoF preview	Yes	Yes
PC socket	Yes	Yes
Built-in flash	Yes, pop-up unit GN 12m @ ISO 100	Yes, GN 17m @ ISO 200
Video	MOV files, 1280x1080 pixels (at 29.97, 25 or 23.97fps), 1280x720 pixels (59.94 or 50fps), 640x480 pixels (59.94 or 50fps), max duration 29mins 59secs or 4GB size	MJPEG files, 1280x720 pixels, 640x242 pixels, or 320x216 pixels at 24fps for up to 5mins
Cable release	No, optional remote release	No, optional remote release
Memory card	CompactFlash (inc UDMA)	SD/SDHC/CompactFlash
Power	Rechargeable Li-Ion battery BP-511A (supplied)	Rechargeable Li-Ion (supplied)
Connectivity	USB 2.0 Hi-Speed	USB 2.0 Hi-Speed/HDMI
Weight	740g (without battery or card/s)	840g without battery or card/s, 920g with
Dimensions	145.5x107.8x73.5mm	147x114x74mm



accurate focus, exposure and white balance in a range of conditions. Until recently, Canon seemed wedded to its 35-zone evaluative metering system, but the EOS 7D has a new 63-zone Focus Colour Luminance (iFCL) system that uses subject distance data from the AF module along with colour and luminance (brightness) information to help determine the correct exposure. The EOS 7D also has two metering sensors instead of the more common single unit, to reduce the usual bias towards red light.

As is now expected with new DSLRs, the EOS 7D and D300S can record video footage. Canon steals the show as the EOS 7D can record movies at 1920x1080 pixels (Full HD) at 30fps, 25fps or 24fps, or 1280x720 pixels (720p) and 640x480 pixels at 60fps or 50fps, with contrast-detection AF and manual focus being possible. Movies may also be recorded on the Canon model for up to around 12 minutes (or up to 4GB) at Full HD resolution in a single burst. The D300S is a little less impressive, as the maximum resolution for video recording is 1280x720 pixels at 24fps for a maximum of five minutes. The different maximum recording times are a consequence of the different file formats used.

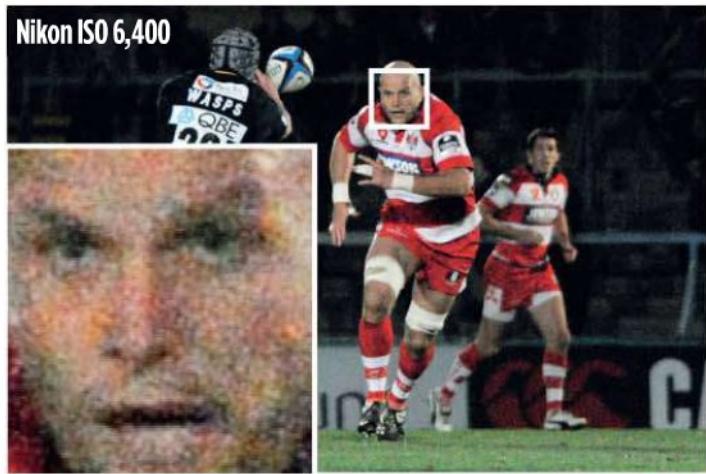
Another feature that seems to be popular at the moment is the electronic level. Although both cameras in this test have one, only the EOS 7D can display it in the viewfinder (using the AF points) and the LCD screen. However, the viewfinder level disappears as soon as the shutter release is half-depressed, so it is of little use when handholding the camera.

These are two highly specified cameras, and apart from the EOS 7D's higher pixel count, maximum sensitivity of ISO 12,800 (versus ISO 6,400 on the D300S) and more impressive video capability, which is tempered by the D300S's greater number of AF points, there is little to separate them. Canon has even finally introduced in-camera wireless flash control to bring it into line with other manufacturers' enthusiast-level offerings. Also, in support of the sports-photographer-friendly AF systems (which I will discuss in more depth later), the EOS 7D and D300S are capable of impressively high continuous shooting rates of 8fps and 7fps respectively without any additional battery packs.

Build and handling

Although it looks only slightly bigger than the Canon camera, the Nikon D300S is noticeably heavier in the hand. This, and the slightly





Both cameras are capable of recording a respectable amount of detail at their highest sensitivity settings, but the Canon EOS 7D offers a 1EV advantage with its expansion setting going up to the equivalent of ISO 12,800. These JPEG images were taken with the cameras' high ISO noise-reduction settings set to the standard or normal level



more cramped and less ergonomically shaped thumb-rest, makes the D300S less comfortable to use one-handed despite the appreciably more grippy texture of the finger-hold.

Canon is a master of dual-purpose buttons and this gives its EOS 7D a slight edge for some users because it frees up space for additional controls. The magnification control buttons that sit just above the thumb-rest, for example, double up as the focus-point selection and AE lock controls. This means there is room to the left of the LCD screen for a button to provide access to the Picture Style options. I find this especially useful when shooting monochrome images as there are a number of filter and toning options to experiment with. Nikon users, on the other hand, must delve into the menu – be it in the default Shooting menu location or the user-customisable My Menu screen.

Of course, the flip side to Canon's multi-tasking buttons is that they must be used in combination or change purpose in different modes. Nikon tends to opt for dials on its DSLRs more often than Canon. With the D300S, for example, the shooting mode is selected using the large dial on the left of the top-plate. This makes it very quick and easy to switch the camera from single shot to continuous shooting, self-timer or even mirror lock-up. On the downside, it is not possible to lock the mirror in the up position while using the self-timer, but at least the user can check the camera's setup without having to turn it on. Nikon has also provided switches to allow the D300S user to select the focus, AF point selection and metering modes. With experience, users can make these changes without taking the camera away from the eye. Canon EOS 7D users, however, must look at one of

the two LCD screens to ensure the correct option is selected following the appropriate button presses.

Interestingly, Canon has opted to use a switch rather than a button to set the EOS 7D to stills or video recording mode. This control surrounds a button that is used to activate Live View in still mode or start movie recording in video mode.

Both cameras offer a high degree of customisation so users can set them to suit their own preferences. The purpose of the front and rear dials, for example, can be swapped, and with the D300S the direction of the exposure compensation adjustment can be changed from the

default of positive to negative reading left to right, to the more intuitive negative to positive. This was seen on the D300 and D3, perhaps to help ease the switchover for Canon users converting to Nikon.

The customisation also extends to the menu, and the EOS 7D and D300S have My Menu screens to which the user can assign the most commonly used features. Those who regularly shoot moving subjects are likely to want to assign the various AF options to these screens so they can quickly change how the cameras react to changes in subject distance.

While these two cameras can take a while to get to know and

understand in detail, they are relatively easy for enthusiasts to set up and use for the first time. However, the introduction of video recording, plus the various methods of selecting AF points and tracking moving subjects or focusing when composing images using Live View technology, means the menus are extensive and involved. Camera manufacturers need to start allowing users quicker access to groups of selected features.

White balance and colour

Neither camera's white balance system threw up any surprises during this test. Both are very capable and deliver natural-looking



In its evaluative metering mode the EOS 7D consistently produced a brighter image of this scene when the AF point (which is linked to the metering) was on the tree on the right. Reducing the exposure by 0.67EV produced a more satisfactory image overall

Features in use

AF with moving subjects



Nikon D300S



I TOOK the cameras to a rugby union match between London Wasps and Gloucester to compare the AF systems' performance with moving subjects and in low light. A quick experiment with the D300S's 51-point Dynamic AF (3D tracking) mode and the EOS 7D's Auto-select 19-point AF option confirmed that these are not the correct options to use when photographing a team game. Instead, I set the D300S to its 21-point

Dynamic Area AF mode and used the AF point expansion mode on the EOS 7D. In these modes the Nikon camera uses the 20 points around the original selected AF point to track the subject, while the Canon model uses the four surrounding points.

Rugby is a challenging sport for an AF system as movement is erratic and fast paced. However, both cameras performed extremely well, even as the light fell. The two AF systems quickly latched onto the subject, and although there were a couple of times when the focus inexplicably missed the target I have a healthy sized collection of usable images. On a few occasions when the AF point was directly over the subject, both cameras managed to return a soft result despite the fact that there are sharp images before and after. Some of these soft images weren't the result of a minor miss, but a significant shift of focus.

Despite lots of testing, I was unable to distinguish a difference in the speed of the two AF systems as they are both impressively fast. Also, the greater number of AF points involved in focusing with the Nikon didn't have a significant impact. It seems that Canon has come up with an AF system to meet the challenge from Nikon.



The image of the try-scorer on the far right isn't as sharp as I would like it to be, but the Canon sequence taken at 8fps shows how fast the pace of a professional game of rugby is

images in a range of conditions. During a day with mixed weather, when the light is constantly changing, the auto setting is a dependable option with both cameras. However, the dedicated daylight setting is useful when you want to retain a little more atmosphere, perhaps towards the end of the day when the light appears warmer.

When shooting a rugby match towards the end of a bright winter's day, the white balance systems of both cameras did a very respectable job and produced natural-looking images under the floodlights. Shots taken on the D300S as the daylight faded and before the floodlights became the main source of illumination look a little cooler than those from the EOS 7D. Although neither camera produced 100% accurate results, I prefer the slightly warmer images from the Canon camera. Also, although the D300S was in its Standard Picture Control mode, the grass in some of the JPEG images is artificially vivid. While the EOS 7D tends to produce

quite punchy, saturated images in its Standard Picture Style setting as well, the results are a little more natural.

Metering

I have mixed feelings about the EOS 7D's new 63-zone Focus Colour Luminance (iFCL) metering system. In its evaluative mode it uses information from the selected AF point, and while in most cases this ensures that the main subject is correctly exposed, I am concerned that the weighting towards the AF target is a little too high and it can be to the detriment of the rest of the scene. When shooting in woodland on a sunny winter's day, for instance, the EOS 7D produced significantly brighter images than the D300S. While this meant that the foreground looked good, the leaves in the distance were too light and I had to reduce the exposure by 1EV to get a result that I felt more accurately reflected the scene. In contrast, the D300S produced a very good result without any intervention from me. Both sets

of images benefited from Curves adjustment, but the in-camera results were closer to what I wanted from the D300S.

It is, of course, important to bear in mind who these two cameras are aimed at. Enthusiast photographers understand that histogram views are there for a reason and will double-check the exposure. While the EOS 7D doesn't appear to be overly distracted by very bright areas in a scene, it may be necessary to reduce the exposure when the highlights are important.

Not unusually, both cameras struggle a little in bright, overcast conditions.

Viewfinder, LCD, Live View and video

I liked the 100%, 1x magnification viewfinder in the Canon EOS 7D when I first tested it (AP 7 November), but when switching between the two cameras in this test it brought home just how impressive it is. It offers a slightly brighter, crisper and higher

contrast view than the D300S's 100%, 0.94x magnification viewfinder, which is very respectable in itself.

In keeping with their top-of-the-range status, the EOS 7D and D300S have 3in, 920,000-dot (307,000-pixel) LCD screens. In low light these provide a very detailed view that makes manual focus, assisted by the magnified view, a breeze. In brighter conditions the extra effort made by Canon to reduce reflections and glare pay dividends.

Canon has filled the gap between the crystals of the display and the hard glass cover with an optical elastic material that has a similar refractive index to the glass. It doesn't eliminate all reflection, but the EOS 7D's screen is easier to see from a range of angles than the D300S's screen when shooting outdoors. It makes using the Live View technology a little easier when photographing a low-level landscape, but it's not quite the same as having an articulated screen.

The quality of video

footage from both cameras is high, but it is inadvisable to use the AF system with either, and hand movements are best kept to a minimum when the built-in mics are employed to record sound. Fortunately, both cameras have a mic socket to enable an external stereo mic to be connected.

Dynamic range

We measured the dynamic range of the D300S at 12.5EV, which just pips the 12EV range of the EOS 7D. This difference is hardly surprising given the higher pixel count of the Canon camera, but in practice I didn't notice a significant difference between the dynamic range of the cameras.

Both cameras offer dynamic range optimisation settings, but Nikon has arguably made its selection more straightforward as the D300S has just the one, in the form of Active D-Lighting (with five levels), whereas the EOS 7D user has to choose between Highlight Tone Priority and Auto Lighting Optimizer (with four levels). Like Nikon's Active D-Lighting, the Auto Lighting Optimizer assesses each image as it is processed and brightens the shadows. The precise outcome from either system can be hard to predict, but they are nevertheless useful when shooting JPEG images in high-contrast conditions. Canon's Highlight Tone Priority mode is useful when it is important to protect the highlights, but in use I find it better to decrease the exposure and use the Auto Lighting Optimizer on its higher settings to lighten the shadows.

Autofocus

When Nikon introduced the D300 and the D3 back in 2007, it raised the level of expectation that enthusiast photographers have from an autofocus system. Not surprisingly, Nikon chose to stick with its highly successful 51-point Multi-CAM 3500 AF system, which is found in all its enthusiast and professional-level DSLRs, for the D300S. Canon had to do something to meet the challenge presented by Nikon, so it introduced a completely new AF system for the EOS 7D. The Canon system has 19 cross-type AF points, which, like the D300's 15-biaxial points, are effective with lenses with a maximum aperture of f/5.6 or greater. The EOS 7D's central point is extra sensitive when used with f/2.8 or faster lenses thanks to the diagonal arrangement of a second cross-type sensor.

The cameras offer AF modes to cater for stationary and moving subjects, and there are a number of ways of selecting the AF point, with

The EOS 7D brings Canon's AF system pretty much up to speed with what Nikon has been offering since the D300 was launched

complete manual control or totally automatic selection being possible.

With stationary subjects, most enthusiast photographers are likely to opt for the single-point AF modes. This option sets the camera to focus the lens once the shutter release button is depressed and keep it focused on that point until the button is released and depressed again. However, things get a little more complex when the subject is moving and the continuous-servo options are selected. The simplest choice is to use the single-AF point modes of the cameras, and provided the AF point remains over the subject both cameras will attempt to keep it in sharp focus. Alternatively, in the D300S's 51-point Dynamic AF (3D tracking) mode or the EOS 7D's Auto-select 19-point AF setting, the photographer can select the starting

AF point and the camera tracks it. Helpfully, with these modes selected and the appropriate custom function activated, the active points illuminate so it is fairly easy to see whether the camera is tracking the correct subject or not. With the D300S this is particularly useful when the subject is a distinctly different colour from its background. However, it isn't especially helpful while photographing team sports when lots of potential subjects are milling about. On these occasions the D300S user is better off selecting one of the other Dynamic-area AF options, which specifies whether 9, 21 or all 51 of the points are to be used to track the subject. It can be very helpful to reduce the number of points to keep the focus in a specific area of the frame, while still giving scope for the subject to move away from the originally selected point.

Canon has provided similar functionality in the EOS 7D as Zone AF (one of the three default AF point selection methods comprising Single-point AF, Zone AF and Auto-select 19-point AF) divides the 19 AF points into five zones that may be selected. While this option is helpful, it is difficult to be precise with the target. In many instances I found the AF point expansion mode that is made available via Custom Function III-6 very useful. In this mode the photographer selects the AF point manually, but EOS 7D users may

also employ the surrounding AF points to achieve focus.

As well as providing control over which AF points are employed to achieve sharp focus, both Canon and Nikon allow users to take control over how quickly the cameras should adjust to changes in subject distance. This enables photographers to track a subject as it passes behind a barrier (perhaps the goalposts of a rugby match) without the camera focusing on the barrier and then having to refocus on the subject. However, there is a little more subtlety involved and it's important to think about what is likely to happen to a moving subject during a shoot. If the subject is likely to disappear from view only for a short space of time, it may be advisable to set the cameras to adjust the focus quite quickly. However, when there are likely to be lots of interruptions in the line of view, perhaps when shooting a team game, a longer delay may be necessary to keep track of the main subject.

Even in low light, the two AF systems involved in this test are very good. Although I did experience a few AF misses with both cameras, when I was able to keep the AF point on the subject in most cases they delivered a sharp result. Having 51 AF points across the imaging frame is a bonus when trying to pick out a particular detail within the scene, but the 19 points of the Canon system also provide good coverage. **AP**

Our verdict

NIKON states that one of the reasons for sticking with a pixel count of 12 million for the D300S is that it enables the camera to produce high-quality images in a range of conditions, including low light. With the EOS 7D, however, Canon has just whacked that ball straight back over the net. Despite having 18 million effective

photosites on its APS-C-sized sensor, the EOS 7D has a maximum sensitivity setting of ISO 12,800, which produces usable results that can make good A3 prints.

The EOS 7D also brings Canon's AF system pretty much up to speed with what Nikon has been offering since the D300 was launched around two years ago. Interestingly, although

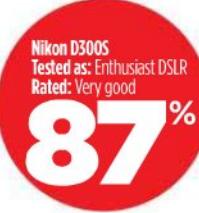
Canon 7D

Features	9/10
Noise/resolution	28/30
Dynamic range	9/10
LCD/viewfinder	9/10
Build/handling	8/10
Autofocus	9/10
Metering	8/10
AWB/colour	9/10



Nikon D300S

Features	9/10
Noise/resolution	26/30
Dynamic range	9/10
LCD/viewfinder	8/10
Build/handling	8/10
Autofocus	9/10
Metering	9/10
AWB/colour	9/10



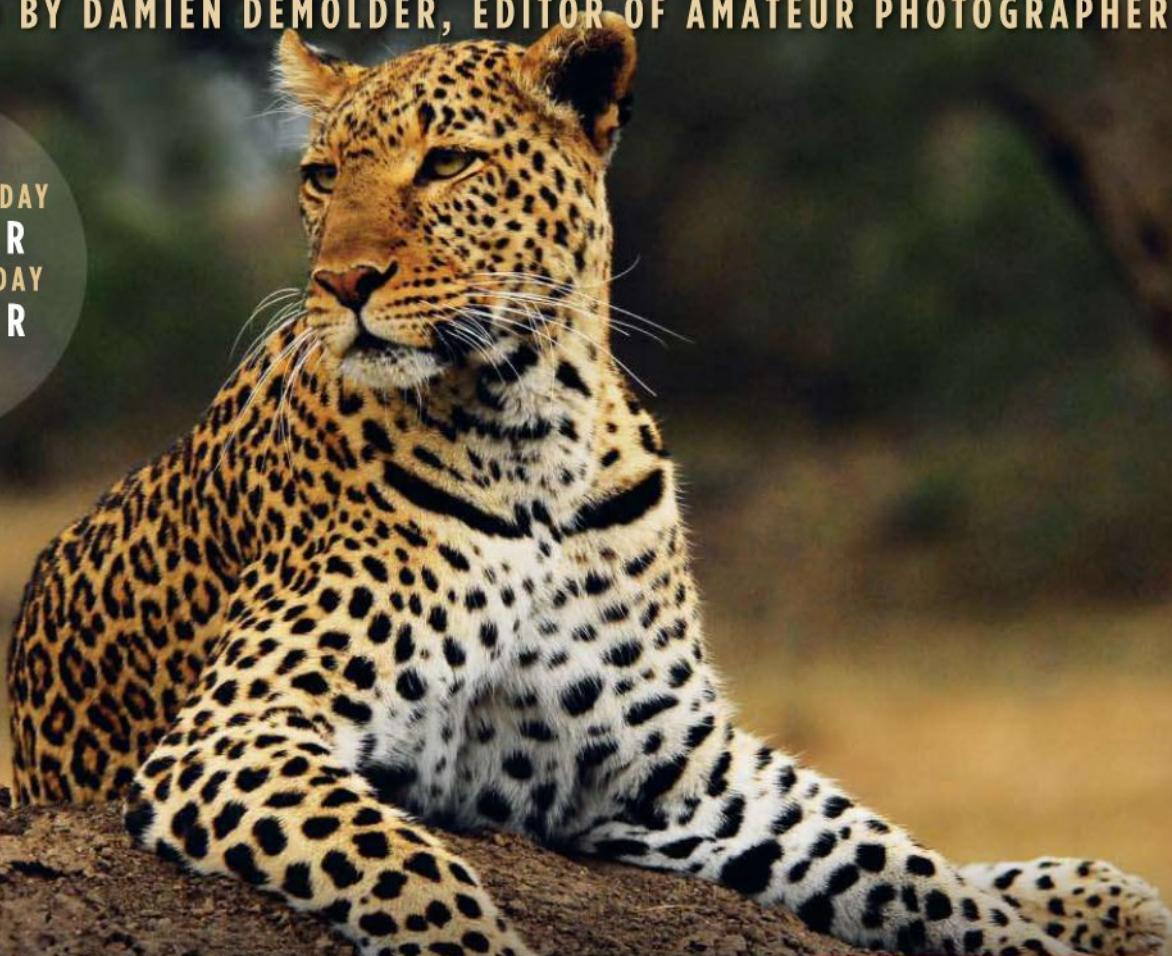
the EOS 7D has a new AF system, it borrows features from the EOS-1D Mark III that allow the photographer to tailor the speed of its response to suit the subject. This is something that the EOS 5D Mark II doesn't offer and I believe it indicates that there has been a change in thinking at Canon. The company now appears to recognise that enthusiast photographers are becoming increasingly sophisticated in their demands and are not prepared to pay extra for optional accessories like the ST-E2 Speedlite transmitter to get functionality that is included in many other DSLRs. All this suggests that Canon has woken up to the fact that although it was once the market leader, it cannot rest on its laurels if it is to regain and retain that position.

Both cameras in this test are very good, but the recent drop of just under £500 in the street price of the Canon EOS 7D makes it especially attractive. Nevertheless, the D300S is also a versatile camera capable of producing superb images that make excellent A3 prints. However, I have adjusted the scores to reflect my findings.

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18 OCT 4x4 Game Drives to Samburu Intrepids. Back to Lodge

19 OCT 4x4 Game Drives to Samburu Intrepids. Back to Lodge

20 OCT 4x4 Game Drive before breakfast Internal Flight to Masai Mara Game Reserve 4x4 Game Drive to Mara Intrepids Back to Heritage Hotels Tented Lodge

21 OCT 4x4 Game Drives to Mara Intrepids. Back to Lodge

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Lens confusion

Ken Williams asks I recently bought a Canon EOS 1000D body. When I came to buy a lens I found a huge selection with an equal variation in price. I still have my film cameras with Zeiss optics and they produce good results. I've been told that if I were to attach a Zeiss or Leitz lens to a digital camera, I would be amazed.

Looking through the advertisements in AP, I see that an EF 50mm f/1.8 Mark II is less than £100 new and an EF 85mm f/1.8 USM is £310. But a 90mm f/2.8 TS-E, which is slower (and one would assume cheaper) is £1,199, while an EF 100mm f/2 USM, which is faster (and one would assume more expensive) is cheaper at £377.

Is there any way of knowing

which lenses might suit my purposes? I usually use a tripod and tend to use an aperture of f/5.6 or smaller for most of my shots, so wide apertures are not important.

Matt Golowczynski replies The maximum aperture of a lens often serves as a loose indication of its price, but there are additional factors to consider. The EF 50mm f/1.8 Mark II is a small, lightweight lens with a simple optical construction and a plastic mount. This makes it economical to produce, although I imagine the scale on which Canon is able to make such a popular lens also helps.

The EF 90mm f/2.8 TS-E is more of a specialist optic for correcting converging verticals and manipulating depth of field. It is produced on a far smaller scale and has a more complex construction. It needs to maintain a sufficiently large imaging circle when tilted and shifted and, although it also features

six elements, these are much larger and heavier than those in the EF 50mm f/1.8 Mark II. Needless to say, all these costs are reflected in its asking price.

You don't specify exactly what sort of photography you require a lens for, but Canon has a few high-quality optics that aren't particularly 'fast'. One of its most popular lenses is the EF 17–40mm f/4 L USM, priced at around £600. You'd be right in assuming that it would be more expensive were it to have a constant aperture of f/2.8, but as it would need to gather twice as much light this is understandable.

A good macro choice is the EF-S 60mm f/2.8 macro lens at around £350. Although it is a faster optic, it is designed solely for sub-full-frame-sensor cameras, such as your own. Canon is therefore able to manufacture it to more compact proportions. If you are in any doubt as to a quality of a lens, refer to a review where its optical qualities are suitably assessed.

Budget tripod

Bill Loney asks I have owned my tripod for many years, but it is finally giving up the ghost as two of its leg clasps have broken and they no longer catch relevant sections. I am looking to replace it with one that is relatively portable and has a vertical column that may be fixed horizontally so the camera can securely face the ground. My budget is around £100 for the legs,

and while I appreciate that you get what you pay for, is there a suitable model within my budget?

Matt Golowczynski replies You have a few options, Bill. The aluminium Manfrotto 190XPROB weighs 1.8kg and is capable of supporting a load of up to 5kg. Its centre column may be pulled up and around an angle of 180°, and as it is available for around £87 it is within your budget.



You may also want to consider the Giottos MT9340B, which weighs 500g less and supports a load of 1.3kg, but has the advantage of allowing its centre column to swing round through 360° (as shown above). It's also slightly more affordable at around £74.

Card compatibility

Gerald Smith asks I read with interest your review of the Eye-Fi Pro 4GB SDHC card (AP 14 November), where you state that the card is not compatible with CompactFlash-to-SD adapters. Why is it not compatible?

Matt Golowczynski replies Eye-Fi states on its website the cameras with which its cards are compatible, as well as any exceptions within a range. Although it doesn't say whether any particular combinations of CompactFlash-to-SD adapters and cameras work better than others, it does list some known issues reported by users who have attempted to try this out for themselves. These include a reduction to the wireless range of the cards, possibly because of metal in the adapter, and image corruption.

One exception it does mention is an adapter containing specific firmware that allows it to be used in certain Canon EOS models. It even links to the relevant website where more information can be found, although it states that the company only recommends using its cards with compatible cameras. For more information visit www.eye.fi.



FAQ

Frequently Asked Question

Most high-street labs process colour negative film using the same method, whereby the film is drawn out and cut from its cartridge before being fed through sets of chemicals. For a standard roll of C-41 film, this is both quick and convenient, although it is easy to damage a negative if the machine hasn't been cleaned properly.

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Battery power

AndyOx asks I have been given a Nikon Nikkormat FTn camera, which I know nothing about. I was told it needs a battery, so does this mean it has a metering system?

Sillyconguru replies The battery would originally have been a mercury cell (for its nice flat discharge curve). You will probably need to get a WeinCell or a hearing-aid battery as a replacement.

Laskee replies The Nikkormat FTn is an entirely mechanical camera. The preceding model was the FT, the only difference being the FTn has centre-weighted metering. The battery is only needed for the light meter. It was designed for a 1.2V mercury cell, which is no longer legally available. You can use a modern 1.5V cell, but it will read a stop or two over exposure. The best solution is an MR-9 adapter, which decreases the voltage of a standard 1.5V SR-386 cell to the correct voltage. Correct exposure is indicated by the needle centred between the two 'claws'. The mechanisms on these cameras are prone to sticking if not used regularly, especially the shutter speed ring, so exercise the camera well at all speeds and apertures before using it.

Going freelance

Graham Cott asks I was recently made redundant from my job, which has spurred me on to become a freelance photographer. Although I feel competent enough from a technical point of view, my knowledge of the freelance photography business is scarce. I've already registered as self-employed, so where should I look next?

Matt Golowczynski replies You'll be pleased to know there are a number of resources for the freelance photographer, both in print and online. *Beyond the Lens: Rights, Ethics and Business Practice in Professional Photography*, published by the Association of Photographers, is a useful starting point, with a range of information

on copyright issues, book-keeping and tax, among other things. The printed book is available for £30 plus £3 p&p from www.beyond-the-lens.com, although there's also an electronic version you can download (at the same price but minus the p&p) from the same site. *The Freelance Photographer's Market Handbook 2010* lists a wide array of magazines and publishers, along with requirements for submissions and the sort of prices you could expect to be paid. It's published by The Bureau of Freelance Photographers and is widely available at a price of £14.95. It's also worth examining the HM Revenue and Customs website for the basics on becoming self-employed, if you haven't done so already. Visit www.hmrc.gov.uk/selfemployed/index.shtml for more information.

Anything in the path of the film, such as something stuck to the rollers, can scratch the negative as it passes through. Close examination of a roll of high-street-developed film may show anything from small marks to worryingly lengthy lines across many frames.

For this reason, dip-and-dunk processing is an option typically available in professional labs. It is designed to ensure that the film comes into contact with as little as possible, outside of the necessary chemicals, washes and dryers. It works by suspending film from hangers, which are then systematically lowered into

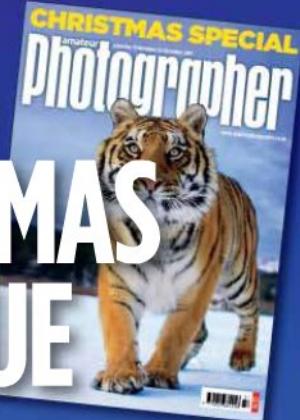
chemical baths before the negatives are washed and dried. Much of this is computer controlled, allowing timings to be exact and temperatures of each individual bath to be monitored. Also, as the process uses tanks, it is possible to develop a range of film formats, from standard 35mm and 120 rolls to 5x4in sheet film.

The downside is the expense, and as the machines require a lot of space in which to operate not all labs can offer the service. It should therefore be used for enlargements and any precise work, rather than the everyday roll of film for which standard processing will suffice. **Matt Golowczynski**

Next week

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Being English

Magnum's **Chris Steele-Perkins** has recently published a book of his images taken in England over a 40-year period. He explains why England is so dear to him

Altered images

Wildlife supremo **Andy Rouse** tells us why he reinvented his style to better document the relationships between animals and their ecosystems

APOY results

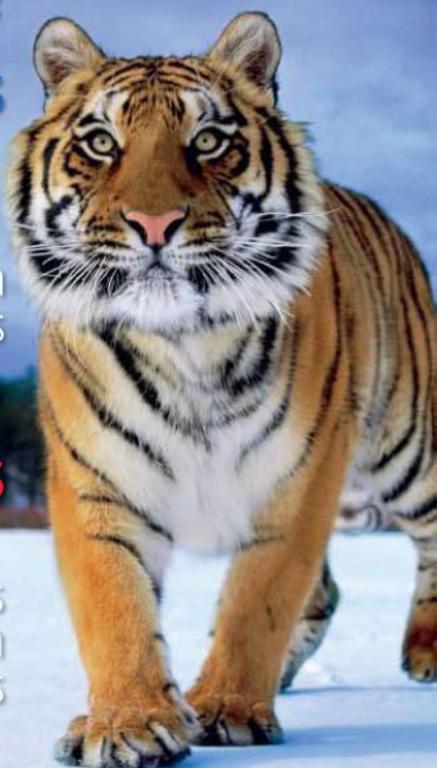
We announce the top 30 winners of the final round of APOY, Low Light, and reveal our overall winner

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ICONIC SCIENTIST

CEK Mees

1882-1960

Geoffrey Crawley recalls a scientist little known outside photography, but within it hailed as a colossus for his own work and as the industry's great 'enabler'

If you claimed that no one in the first half of the 20th century had a greater influence on photographic progress than Charles Edward Kenneth Mees, very few photographic scientists would disagree. Apart from his own research work he was a great 'enabler', able to discern those able to make advances and encourage them. Not least among these were Leopold Mannes and Leopold Godowsky, both of whom were classically trained musicians as well as scientists experimenting with colour photography (see AP 14 March). To these two he opened up the facilities of the Kodak labs to promote their work. In 1936 it emerged as Kodachrome.

CEK Mees was born in 1882 in Wellingborough, Northamptonshire, the son of a Methodist minister. His interest in chemistry was fired at the age of ten when seeing an experiment being made. Higher education began at the prestigious St Dunstan's College and then at University College London (UCL). At St Dunstan's he became friends with Samuel Sheppard through a shared interest in chemistry. The work of Ferdinand Hurter and Vero Charles Driffield (see AP 12 September) on photographic sensitivity was attracting wide attention. It prompted the friends to research the photographic process and produced the thesis for their science degree in 1903.

Their studies continued and in 1907 they published *Investigations into the Photographic Process*, the first authoritative work on the subject. Wratten and Wainwright (see AP 13 June) was the leading UK emulsion manufacturer and Mees joined

the firm after receiving his doctorate (for his work on photographic theory from UCL). Aside from his advanced scientific interests, Mees was an amateur photographic enthusiast and a leading light in the Croydon Camera Club. The proceedings of the club, when he presented a paper, were usually reported in the national photographic press.

All this was to change. George Eastman had been encountering many problems with emulsion making. In 1912 he arrived in England to investigate the leading manufacturer, who had recently introduced panchromatic plates. He wanted Mees, whose loyalty made him demur. So Eastman bought the company, assuring its future, then lured Mees – and his friend Sheppard, who had joined Wratten and Wainwright in 1910 – with the offer to let him found research labs in Rochester, New York. Mees became director of research.

During the First World War he established the first school of aerial photography. He also set up a research facility into the synthesising of organic chemicals of possible use in photographic processes. Later this paid off, especially when novel dyes and couplers were needed for colour films. After the war he motivated the development of metal still and movie cameras under the Kodak label. In 1923 he launched the first amateur movie film and camera – a 16mm black & white model. He foresaw the importance of synthetic materials, and developed plastics and cellulose ester yarns. And in 1936 came Kodachrome, which for more than 70 years was the benchmark for colour transparency. He then encouraged work on the emulsions that were to become Ektachrome and Kodacolor, realising that a new type of colour

Amateur Photographer **ICONS** OF PHOTOGRAPHY

CEK Mees established the first school of aerial photography, was vice-president of Eastman Kodak from 1934-1955 – and had a crater on the Moon named after him!



CEK Mees set up a research facility into the synthesising of organic chemicals of possible use in photographic processes

coupler – oil-permeable not water-permeable – was needed. He became a vice-president of Eastman Kodak in charge of research in 1934, which he remained until his retirement in 1955, aged 73. His 1942 mammoth work, *The Theory of the Photographic Process*, revised in 1954, still finds an honoured place in the library of any serious

photographic scientist. There is a crater on the Moon named after him and the Mees Solar Observatory recognises his work on special plates for astronomical applications.

The citation for the Progress Medal of the RPS, awarded in 1948, stated '... he has had a hand in almost every significant photographic development in the past half century'. **AP**



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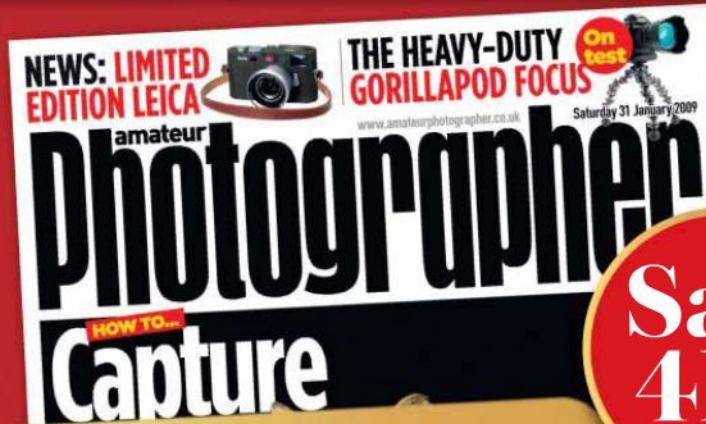
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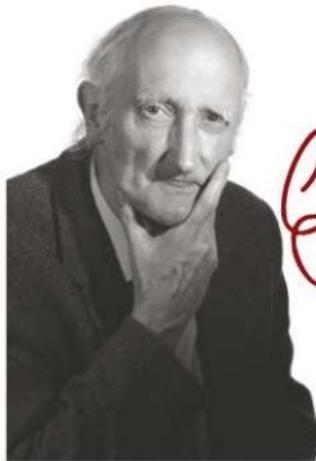
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Geoffrey Crawley explains... Resolution part 2

IN THE SECOND PART OF HIS ANALYSIS OF RESOLUTION, **GEOFFREY CRAWLEY** LOOKS AT PRINT SIZE AND VIEWING DISTANCE

THE camera resolution needed in order for a print to show maximum detail is bound up with print size and viewing distance. In order to restore the perspective of the original subject, a print should be viewed from a distance corresponding to the degree of enlargement (if any) and the focal length of the lens. Thus, perhaps surprisingly, a same-size contact print from full-frame (24x36mm), shot with a standard 50mm lens, should be viewed at 50mm from the eye. And a contact from an 8x10in camera with a 300mm lens should be viewed from 300mm (1ft) away. If we enlarge a full-frame image shot with a 50mm lens by 10x, then natural perspective is established by viewing it from 500mm (about 20in). When long focus and tele lenses are used, natural perspective is unlikely to be seen. A 10x enlargement of a full-

frame image taken with a 300mm lens would be viewed from 3m (about 10ft). That is why perspective is abrupt when a telephoto shot is viewed from a more normal distance.

Viewing distance

These remarks may seem to be remote from the topic of resolution but are actually relevant. As a starting point, we can consider an APS-C-format image shot with a 27mm lens, which is roughly 'normal' or standard for the format. A 10x enlargement will print on an A4 sheet of paper and should be viewed from 10x27mm (270mm or about 11in). A full-frame film or digital image needs about 7.5x enlargement to fit an A4 print, giving a viewing distance of 275mm (15in) for a 50mm lens shot.

At such viewing distances the average eye is rated to be able to separate comfortably about 5-6 lines per mm

on the print. Actually it is line pairs, since without half a white line either side you would not be able to see a black line (see diagram page 68). To give 5 lines per mm in a 10x print requires 50 lines per mm to be recorded on the APS-C-format image. The differing ways in which the output from the four photosites (2x green, 1x red, 1x blue) is dealt with by a camera's software make it difficult to be accurate. However, to meet the 50lp/mm standard, a sensor resolution of 10-12MP is likely to be needed. To meet the critical 30lp/mm quality point this becomes 6-7.2MP.

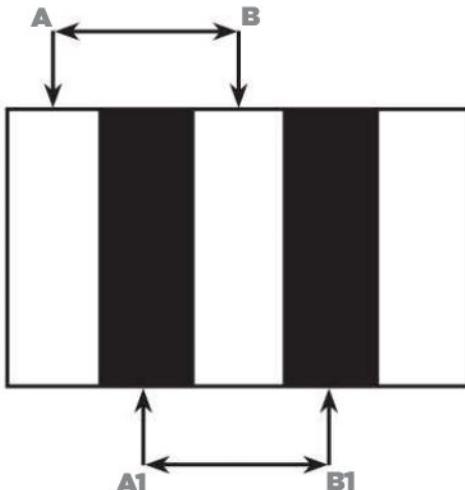
Printer influence

That is not the end of the story, though. When the image is passed to the printer for output, it becomes filtered by the printer resolution: how many dots of ink it can put into a given area of the print. Taking the A4 size and 5 line (pairs)

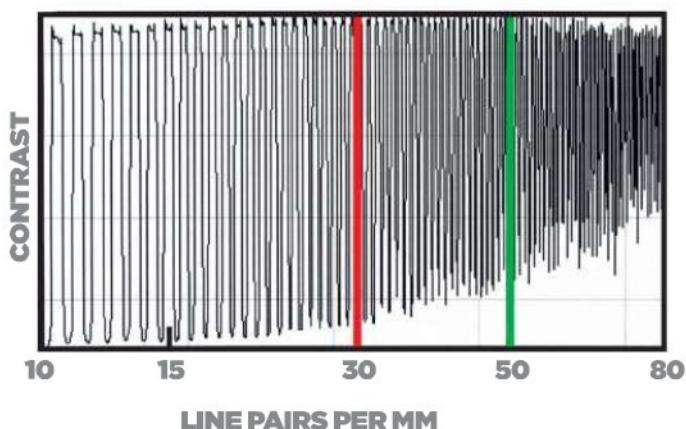
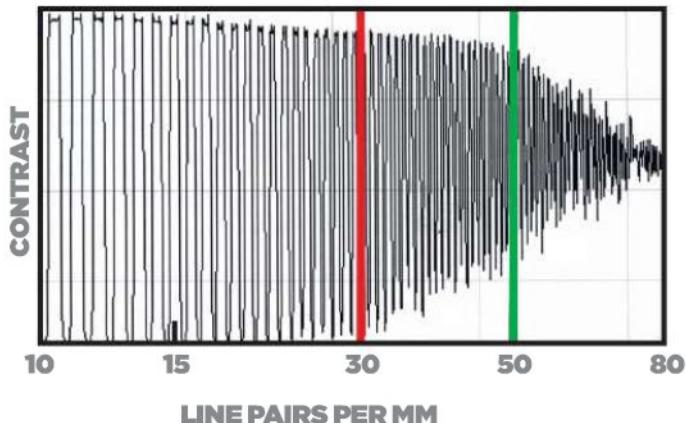
per mm standard, a print resolution of 250 data points per inch is needed. That is near enough to the often-recommended 300dpi. Assuming that minimum of printer resolution, a rough guide can be worked out relating ex-camera file size to print size. An A4 print needs a minimum of 6MP and A3 11MP. Bigger enlargements can be made if the image is resized. This interpolates new pixels with values calculated from the neighbouring ex-camera pixels, rather like blowing up a balloon. However, the quoted printer resolution is really in dot packing density, not linear resolution capability.

That is how resolution works when we are dealing just with the ability to resolve subject detail. But outside technical and scientific applications, what we look for is the overall quality of the image – its pictorial properties. The advantage of a medium or large-format film camera is that the colours and the greyscale luminance range are recorded over a larger area of film than on, say, the 35mm format. So colours and tones are made up of many more individual dye molecules or silver grains. The same applies to digital imaging. The high camera counts of 14-24MP may add little to usable detail resolving power, but they are capable of higher resolution of colour hues and tonal values. Nevertheless, they all end up with a resolution of 8 bits per R, G and B channel when output to the printer. However, this does, theoretically, give 16.77 million colours – far more than the eyes can distinguish.

On a bar-line test target we usually speak of lines per millimetre. In fact, they are line pairs. To see the black line you need the white either side. To see the white line you need the black. The distance A-B and A₁-B₁ is one complete cycle from white to black and back again. The number of cycles in a mm gives the resolving power



Red: a high-contrast lens designed to give critical sharpness to the significant 30-50lp/mm criteria needed for A4-A3 prints. Green: a lower contrast lens offering higher resolving power enabling bigger or sectional enlargements without the need to interpolate new pixels



These are profile traces of a bar-line test target imaged by (top) a good-quality lens designed to give good sharpness and definition to the critical 30 and 50 line per mm and (above) a top-grade lens capable of high resolution of detail. The black areas on the right are where the high resolution exceeds the Nyquist frequency limit of the sensor, therefore creating noise

The science

THE arrival of digital imaging has brought problems in lens design. There is the need to avoid the vignetting caused by the increasing obliquity of off-axis rays directed towards the frame corners. The wider the viewing angle of the lens, the worse this can be. It is reduced by telecentric design, which makes the image rays emerge almost parallel to the optical axis. The microlenses used to optically isolate the sensor's photosites can contribute their own aberrations, but the factors concerning resolution are our main concern in this article.

There is an essential difference between imaging on film and on a digital camera's sensor. The film offers a continuous surface to the incident rays, while sensors offer a raster of optically and electronically isolated sensitive cells. Assuming the film is of slow to medium speed with fine grain, it can record details to the limit of a lens's capability. The

sensor, with its raster receptor, has a point beyond which the pitch of the isolated sites clashes with structural elements in the fine detail. Clearly, the higher the packing density of the sites and the smaller they are, the higher the break-up point is pushed. However, the factors about viewing distance discussed in the preceding section of this article come into play.

MTF tests

The problems of detail resolution are far from new. In the 1950s, Otto Schade of the Radio Corporation of America (RCA) published a paper that has had a profound influence on lens design ever since. When the TV industry began to expand after the Second World War, interest in maximising image quality was intensively researched. It seemed logical to think that high-grade lenses of the type developed for 35mm film photography would work best. However, much simpler, lower

resolution lenses gave much better quality. It was apparent that resolving power in excess of what the TV camera's image tubes could deal with actually reduced quality by causing random electrical noise. Of prime importance is the contrast at which fine detail is imaged.

In bar-line test terms that means maximising the difference in brightness level between the imaged black and white lines. Add to this the finding about excess resolution and the axiom emerged: optimum image quality is gained by maintaining fine detail contrast to the resolution limit of the recording medium in use. This understanding led to lens testing by the MTF (modulation transfer function) system. All this means is that a graph is plotted showing contrast on the upright 'y' axis against resolving power on the horizontal 'x' axis. The MTF is an important tool in lens design and testing, but not the be-all and end-all of lens performance.

Digital data

Now we jump 50 or more years into the digital camera era, and the axiom is as valid as ever. Again, it becomes clear that many of the high-grade lenses of the film era do not give the best quality – for the same reason. Now the discontinuous raster of the sensor's surface, a factor that varies from camera to camera and with the user's choice among the options, has to be included. One logical deduction might be that a 'bridge' digital camera – if the lens has been designed to match the sensor – could be an excellent performer. In a digital camera the break up occurring when image detail collides with sensor resolution results in noise. It is the duty of an in-camera noise-reduction process to seek out noise and smooth it. It does this at the risk of removing fine detail just above the threshold level, as is common experience.

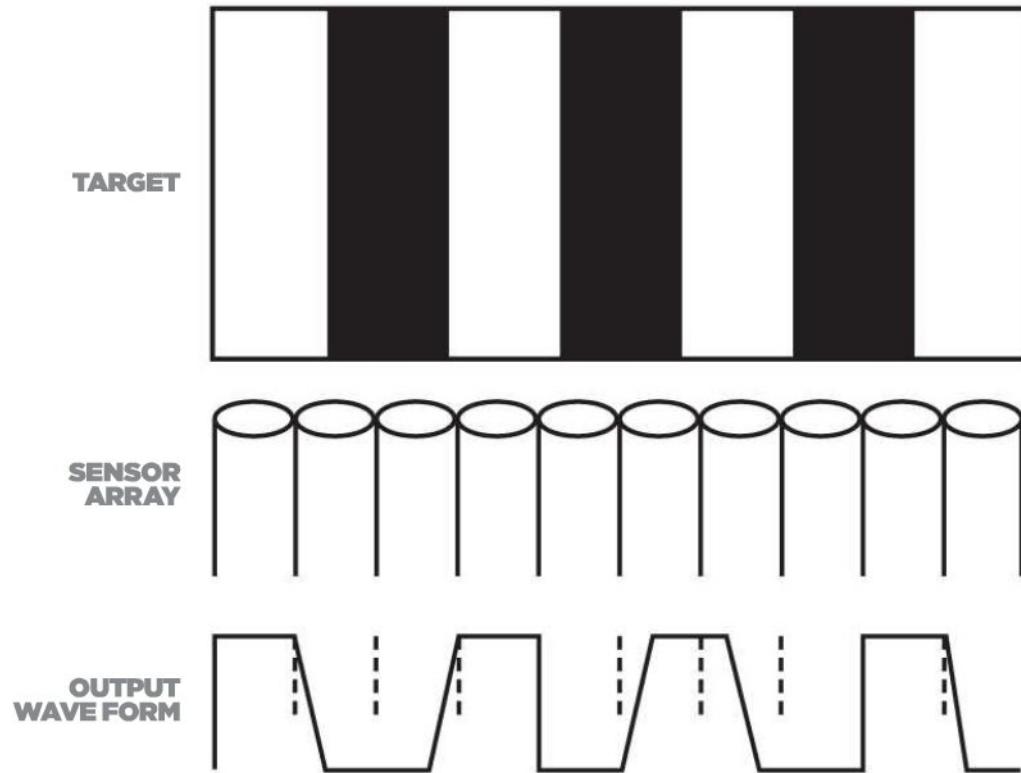
GC It is the duty of an in-camera noise-reduction process to seek out noise and smooth it **GC**

Design factors

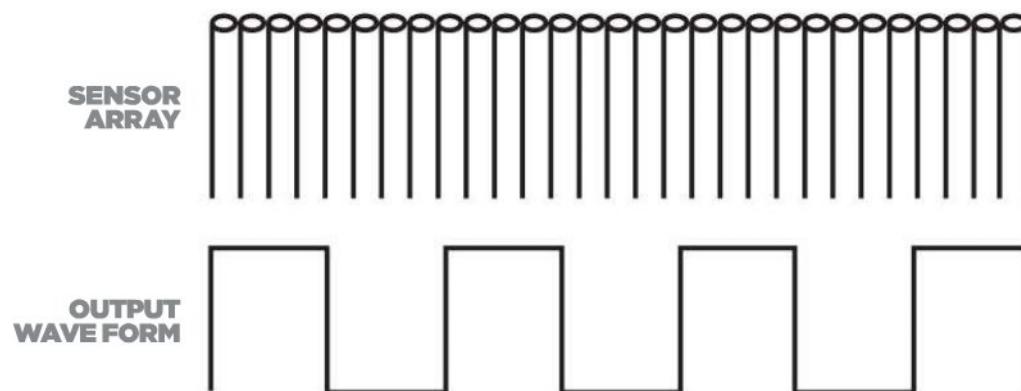
How does the designer go about relating resolving power and contrast? A lens transmits a given volume of light energy. The designer may decide to concentrate the focused energy into resolution to the 30 or 50lp/mm limit. Or it could be spread over a 100lp/mm. In the latter instance the wider spread of the available energy will cause the volume available for the 10 to 30 or 50lp/mm to decrease. This means lower contrast between the imaged black and white bar lines on a test target, and a flatter curve on an MTF graph. When resolution is curtailed at a point, it is known as a roll-off.

The technical considerations appear to make lens design for digital imaging highly complex. Yet when seen in relation to actual practice, as outlined in the first section of this article, it is clear that the adoption of the critical 30lp/mm and the 50lp/mm criteria works well. In practice, as AP lens tests show, still higher resolution of good contrast is often given. Photosites packing density steadily increases over time, so this finer detail may eventually be accurately recorded rather than morphing into noise to be smoothed by the camera's firmware. For those interested, the formula to find the highest bar line pair 'R' recordable by a photosite with dimension 'p' is $R = 1/2p$ lp/mm. So for a typical 0.0075mm diameter square site: $1/2 \times 0.0075 = 1/0.015 = 66$ lp/mm.

The result of this equation is known as the Nyquist frequency after the Swedish-born naturalised US citizen (1889–1975) who investigated the field of information theory. Harry Nyquist's working life was spent in the USA, much of it in the research establishment that became the Bell Laboratories. There, in 1962, the potential of the CCD (charge-coupled device) to act as a camera photosensor was first recognised. The concept of the 'N' frequency was among the least of his math's findings. That of the Nyquist-Shannon sampling theorem to measure the quantity of information a system can transmit has been suggested as a method of rating a



Above: Schematic of the effect of the sensor resolution being below that of the target detail: the square waveform is distorted. The slopes dilute the output to grey in actual imaging



Above: Here the Nyquist frequency of the sensor's photosites is sufficient to record the target square waveform accurately



digital camera's total recording capacity.

When I first became involved with digital images about 25 years ago, they were all scanned from originals on prints and transparencies from film. The pixels were sometimes rectangular, which was thought to reduce aliasing. That is the effect by which the digital sampling at discrete intervals results in the displacement 'left and right' of pixels representing

a curve or slanted line. It causes a jagged edge and can be most evident in bitmapped images, those made up only of black or white pixels, or a 'line' image as it's known in the film world.

These articles have only brushed on some of the factors affecting the resolving power of digital imaging systems. The aim has been to explain some of the more important practical considerations. **AP**

The actual result of a fine-detail target to sensor resolution mismatch in a photograph. The continuous surface of a film prevents this occurring

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ROGER HICKS is a much-published author on photography. He has written more than three dozen books on the subject, many in partnership with his wife, Frances Schultz. Roger started photography as a teenager in the 1960s and worked professionally in a London advertising studio in the mid-1970s. He has been a freelance photographer/writer since 1981, contributing to many photography magazines, including *Shutterbug* in America. Visit his website at www.rogerandfrances.com.

THE concept of a camera for life – one that you can buy, and then use until you pop your clogs, without really needing another one – is dependent to a considerable extent on the amount of life you have in front of you. Then again, you probably can't afford a 'camera for life' before early middle age, and even if you could, you might not be sure which camera would suit you for life before the same age or later: somewhere in your 30s or 40s, say. But can the concept exist today?

You have to allow for technical advances, but there are two basic questions. First, there must be a 'mature technology': something where all the basics are there, and improvements are likely to be modest and incremental, or possibly illusory and driven by the marketing department. Second, you need a mature attitude to technology.

In what follows, I'll use Leicas as an example, because they are what I use, but exactly the same arguments could be applied to top-end Nikons or, presumably, Canons, although I've never followed Canon equipment closely enough to know.

My M4-P, bought when I was about 30, had the potential to be a 'camera for life' (and I'm still using it decades later), but I have to confess to being seduced by a meter. I never really cared for the M6, and I actually disliked the M6 TTL, but when the MP came out, well, that looked like a camera for life. If I use it as long as the M4-P I'll be pushing 90 and, as I say, the M4-P is still going strong, so there's no reason why the MP shouldn't see me out. I really can't see how they could improve the MP to a sufficient degree to make me want another film Leica.

Then the M9 came along. Yes, for colour I now shoot mostly digital, though for black & white, film is still the uncontested winner. Actually, it still has quite a few advantages in colour as well, especially if you shoot slides or Kodak Professional Ektar 100, but that's another story.

The question is this, however: can the (digital) M9 be a camera for life in the same way as the (film) MP? The answer, I suspect, is quite close to 'yes'.

It is not an unqualified 'yes', because Leica has undertaken only to support the M9 for 20 years – that is, until 2029. On the other hand, if electronic spares (most notably imaging chips) start running out in 2027, it will probably be cheaper to offer the customer a very good deal on an M17 (or whatever it is by then) than to repair the M9. Or, of course, they may find that they have enough spares to last until 2040 or beyond.

The M9 is a mature technology; or at least, mature enough for me. Yes, I can see where they might make improvements, most notably to high ISO sensitivity, but with fast Leica prime lenses I don't find ISO 2,500 limiting. It's faster than I've normally rated film for the last 40+ years, for a start.

This is where we run into my second criterion, a mature attitude to technology. To put it bluntly, do we trust Leica to keep its word, and to go on repairing the

M9 until 2029? There are plenty on the internet who do not. What Leica doesn't understand, these people say, is that after a few years any digital camera, even a Leica, will be worthless, because it will have been superseded.

Perhaps, needless to say, I think they're wrong. They are wrong because this is not a mature attitude to technology. Once a camera does what you need, it does what you need. It will not stop doing what you need because something newer has come out.

You may find the new features compelling, in which case you might be wise to buy the new camera. If you do not find them compelling, on the other hand, you'd be a fool to waste your money. You would be displaying as immature an attitude to technology as you could readily imagine: that newer is necessarily better.

As I say, I used Leica as an example, because Leicas are what I use. Equally, I would expect the same sort of support only for the most expensive top-of-the-range Nikons or Canons. You can't expect a consumer or even 'prosumer' camera to last for ever, but a top-quality camera should surely have the potential to be a camera for at least a generation, and possibly a lifetime. **AP**

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*Price after Cashback, Cashback ends 31/1/2010

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